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FILE COVERS 1907 - 2 Feb 2003  VOL 138 ISS 6
FILE LAST UPDATED: 31 Jan 2003  (20030131/ED)

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     (FILE 'HOME' ENTERED AT 13:21:49 ON 02 FEB 2003)
               SET COST OFF

     FILE 'REGISTRY' ENTERED AT 13:21:59 ON 02 FEB 2003
               E GDF/CN
L1             1 S E31
L2             2 S E32-E34
               E GROWTH DIFFERENTIATION FACTOR/CN
L3             1 S E16
L4             1 S L1,L3

     FILE 'HCAPLUS' ENTERED AT 13:23:04 ON 02 FEB 2003
L5            47 S L4
L6           149 S MYOSTATIN
L7            96 S (GDF OR GROWTH DIFFERENTIAT? FACTOR)(S)8
L8           199 S L5-L7
               E KLYSNER S/AU
L9             8 S E3,E4
               E MOURITSEN S/AU
L10           44 S E3-E5
               E HALKLER T/AU
               E HALKIER T/AU
L11           73 S E3,E4
L12            2 S L8 AND L9-L11

     FILE 'REGISTRY' ENTERED AT 13:26:28 ON 02 FEB 2003
               E MYOSTATIN
L13          179 S E3

     FILE 'HCAPLUS' ENTERED AT 13:26:41 ON 02 FEB 2003
L14           74 S L13
L15          201 S L8,L14

     FILE 'REGISTRY' ENTERED AT 13:27:17 ON 02 FEB 2003
L16          185 S (GROWTH(L)DIFFERENTIAT?(L)FACTOR(L)8)/INS.HP

     FILE 'HCAPLUS' ENTERED AT 13:27:56 ON 02 FEB 2003
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L17          65 S L16
L18         203 S L15,L17
L19           2 S L9-L11 AND L18
L20           1 S L19 AND DOWN REGULAT?
                SEL RN

     FILE 'REGISTRY' ENTERED AT 13:29:02 ON 02 FEB 2003
L21          44 S E1-E44
L22          22 S L21 AND L1-L4,L13,L16
L23          22 S L21 NOT L22
L24          13 S L23 AND SQL/FA
L25           9 S L23 NOT L24

     FILE 'HCAPLUS' ENTERED AT 13:29:59 ON 02 FEB 2003
L26          62 S L24
L27           5 S L26 AND L9-L11
L28           5 S L20,L27
L29          13 S L18 AND (DOWNREGULAT? OR DOWN REGULAT?)
L30           5 S L18 AND (VACCIN? OR IMMUNIZ? OR IMMUNIS?)
L31          11 S L18 AND INJECT?
L32          84 S L18 AND (MUTAT? OR INSERT? OR DELET? OR ADDITION? OR SUBSTITU
L33           9 S L18 AND CHIMER?
L34          10 S L29-L31 AND L32,L33
L35          31 S L29-L31,L20,L28,L34
L36          18 S L18 AND RECOMBIN?
L37          46 S L35,L36
L38          46 S L37 AND L5-L12,L14,L15,L17-L20,L26-L37
L39          17 S L38 AND (PD<=19990726 OR PRY<=19990726 OR AD<=19990726)
L40          18 S L28,L39
                SEL DN AN 1 2 10 12 14 16 17 18
L41          10 S L40 NOT E45-E68
L42           8 S L40 NOT L41
                SEL DN AN 4
L43           1 S L42 AND E69-E71
L44          11 S L41,L43
                E MUTATION/CT
L45          25 S E3-E42 AND L18
                E E3+ALL
L46          25 S E1+NT AND L18
L47          25 S L45,L46
L48          16 S L47 AND (PD<=19990726 OR PRY<=19990726 OR AD<=19990726)
L49          14 S L48 NOT L40
L50          11 S L49 AND PROTEIN
L51           3 S L49 NOT L50
L52           9 S L49 AND MUSCL?
L53           9 S L50,L51 AND L52
L54           5 S L49 NOT L53
L55          20 S L44,L53 AND L5-L12,L14,L15,L17-L20,L26-L54
L56          15 S L55 AND MUSCL?
L57           8 S L55 AND ?REGULAT?
L58          20 S L55-L57

     FILE 'HCAPLUS' ENTERED AT 13:46:31 ON 02 FEB 2003

=> d all tot 158

L58  ANSWER 1 OF 20  HCAPLUS  COPYRIGHT 2003 ACS
AN   2002:696465  HCAPLUS
DN   137:231356
TI   Turkey myostatin for increasing muscle mass and testis
     size as well as reducing body fat of livestock animals
IN   El Halawani, Mohamed E.; You, Seungkwon
PA   USA
```

SO U.S. Pat. Appl. Publ., 40 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K039-00
NCL 424185100
CC 15-2 (Immunochemistry)
Section cross-reference(s): 2, 3, 5, 17
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002127234	A1	20020912	US 2001-754826	20010104
WO 2002094315	A2	20021128	WO 2002-US21862	20020104 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-754826 A2 20010104 <--

AB A method to alter the phenotype of animals, e.g., avians, which employs passive and active **immunization** is provided. The method uses immunoconjugate of **myostatin** derived from an avian or vertebrate animal, esp. turkey, linked to a carrier such as keyhole limpet hemocyanin. The method may also use anti-**myostatin** antibodies for passive **immunization** of livestock animals, esp. turkey, chicken or pig.

ST turkey **myostatin muscle** mass testis size livestock animal

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(1; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(2; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(3; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(4; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(5; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Bone morphogenetic proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(7; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CP-1; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-1 or growth/differentiation factor 1; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-10 or growth/differentiation factor 10; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-11 or growth/differentiation factor 11; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-2 or growth/differentiation factor 2; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-3 or growth/differentiation factor 3; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-4 or growth/differentiation factor 4; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-5 or growth/differentiation factor 5; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-6 or growth/differentiation factor 6; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-7 or growth/differentiation factor 7; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GDF-9 or growth/differentiation factor 9; turkey **myostatin**

for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Cytokines
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MIC-1; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Growth factors, animal
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MIS or Mullerian duct-inhibiting substance; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Proteins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Vgr-1 (Vg1-related); turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Antibodies
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(anti-idiotypic; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Drug delivery systems
(carriers; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Human
(consumption; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Immunoglobulins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fragments; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Aves
(game bird; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Fissurella
(hemocyanin; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Drug delivery systems
(immunoconjugates; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Hemocyanins
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(keyhole limpet; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Cytokines
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(macrophage inhibition cytokine; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT **Muscle**
(mass increase; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Antibodies

RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(monoclonal; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT **Immunization**
(passive; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Adipose tissue
(redn.; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Testis
(size increase; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Animal
Aquatic animal
Aves
Cattle
Chicken (Gallus domesticus)
Crustacea
DNA sequences
Feed
Fertilization
Fish
Goat
Horse (Equus caballus)
Immunization
Livestock
Lobster
Mammalia
Molecular cloning
Phenotypes
Protein sequences
Sheep
Shrimp
Struthio camelus
Swine
Turkey
Vaccines
Vertebrata
(turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Antibodies
Bone morphogenetic proteins
Fusion proteins (**chimeric** proteins)
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Aves
(waterfowl; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Transforming growth factors
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.-; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Transforming growth factors
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.1-; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Transforming growth factors

RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.2-; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT Transforming growth factors
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.3-; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT **457995-62-9P, Growth/differentiation factor 8** (turkey)
RL: AGR (Agricultural use); BPN (Biosynthetic preparation); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT **457995-61-8P**
RL: AGR (Agricultural use); BPN (Biosynthetic preparation); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT 114949-22-3D, Activin, analogs 117628-82-7, Follistatin **271597-12-7, Growth/differentiation factor 8**
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT 458061-51-3
RL: PRP (Properties)
(unclaimed protein sequence; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT 457878-13-6 457878-15-8 457878-17-0
RL: PRP (Properties)
(unclaimed sequence; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

IT 57285-09-3D, Inhibin, analogs
RL: AGR (Agricultural use); FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.alpha., .beta.-.alpha., and .beta.-.beta.; turkey **myostatin** for increasing **muscle** mass and testis size as well as reducing body fat of livestock animals)

L58 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:676196 HCAPLUS
DN 137:212638
TI cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use
IN Wolfman, Neil M.; Khor, Soo Peang
PA Wyeth, John, and Brother Ltd., USA
SO PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-12
ICS C07K014-475; C07K014-51; C12N015-62; A61K038-18; A61P021-00; A61P003-00; A61P019-10

CC 6-3 (General Biochemistry)
Section cross-reference(s): 1, 3, 13, 14
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002068650	A2	20020906	WO 2002-US3467	20020208 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-267509P P 20010208 <--

AB This invention relates to inhibitors of **Growth Differentiation Factor-8** (**GDF-8**) proteins and methods for their use. The cDNA and protein sequence of **modified** and stabilized propeptides of human **Growth Differentiation Factor** proteins, such as **GDF-8** and Bone Morphogenetic Protein-11, are disclosed. Also disclosed are methods for making and using the **modified** propeptides to prevent or treat human or animal disorders in which an increase in **muscle** tissue would be therapeutically beneficial. Such disorders include **muscle** or neuromuscular disorders (such as amyotrophic lateral sclerosis, muscular dystrophy, **muscle** atrophy, congestive obstructive pulmonary disease, **muscle** wasting syndrome, sarcopenia, or cachexia), metabolic diseases or disorders (such as type 2 diabetes, noninsulin-dependent diabetes mellitus, hyperglycemia, or obesity), adipose tissue disorders (such as obesity) and bone degenerative diseases (such as osteoporosis).

ST human growth differentiation factor GDF8 cDNA sequence; bone morphogenic protein BMP11 cDNA sequence human; IgG Fc region sequence human disease drug

IT Fusion proteins (**chimeric** proteins)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(BMP-11 fused to stabilizer portion; cDNA and protein sequence of inhibitors of **growth differentiation factor -8** (**GDF-8**) proteins of human and methods for their use)

IT Immunoglobulins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(G, fusion products, **GDF-8** and BMP-11 propeptide fused to Fc region of IgG via linker peptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(G1; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(G4; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Immunoglobulins
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(G; cDNA and protein sequence of inhibitors of **growth**

differentiation factor-8 (**GDF-8**) proteins of human and methods for their use)

IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**GDF-8** (**growth differentiation factor**); cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Immunoglobulin receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG, Fc region, stabilizer portion; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Bone morphogenetic proteins
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MPP-11; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Nervous system
(amyotrophic lateral sclerosis; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT **Muscle**, disease
(atrophy; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Bone, disease
(bone degenerative disease; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Cachexia
Drug screening
Human
Muscle, disease
Muscular dystrophy
Neuromuscular diseases
Obesity
Osteoporosis
Protein sequences
Therapy
cDNA sequences
(cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Lung, disease
(congestive obstructive; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Adipose tissue
(disease; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Metabolism, animal
(disorder; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Oligonucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(double stranded, encoding linker peptide; cDNA and protein sequence of

inhibitors of **growth differentiation factor -8 (GDF-8)** proteins of human and methods for their use)

IT Protein motifs
(glycosylation site, alteration of, **GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT **Mutation**
(in proteolytic cleavage site, of **modified GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor -8 (GDF-8)** proteins of human and methods for their use)

IT Protein motifs
(inactivated proteolytic cleavage site, of **modified GDF-8** propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor -8 (GDF-8)** proteins of human and methods for their use)

IT Protein degradation
(inhibition, of **modified GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(linker, GSGS (glycine-serine-glycine-serine); cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Drugs
(**modified GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT cDNA
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**modified GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**modified, GDF-8** propeptide, half-life of; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Carbohydrates, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(moiety, **GDF-8** and BMP-11 propeptide comprises; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Diabetes mellitus
(non-insulin-dependent; cDNA and protein sequence of inhibitors of **growth differentiation factor-8 (GDF-8)** proteins of human and methods for their use)

IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nonproteinaceous, stabilizer portion comprises of; cDNA and protein

sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT **Mutation**
(**point**, in **modified GDF-8** and BMP-11 propeptide; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(proproteins, **GDF-8** and BMP-11; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**recombinant**, **GDF-8** propeptide with Fc region of IgG; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Cell
(**recombinant**; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Disease, animal
(sarcopenia; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Albumins, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(stabilizer portion of **modified GDF-8** propeptide, comprises of; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT Purification
(tag, **modified GDF-8** and BMP-11 propeptide comprises a; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT **Muscle**, disease
(wasting; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456540-96-8
RL: PRP (Properties)
(Unclaimed; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT **456538-28-6** 456538-31-1
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456538-33-3, Immunoglobulin G (human Fc region) 456538-34-4
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amino acid sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456538-30-0 456538-32-2

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT **456538-27-5 456538-29-7**
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456540-98-0, 3: PN: WO02068650 SEQID: 4 unclaimed DNA 456541-01-8
RL: PRP (Properties)
(unclaimed nucleotide sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456540-97-9 456540-99-1 456541-00-7
RL: PRP (Properties)
(unclaimed protein sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

IT 456527-91-6 456527-92-7
RL: PRP (Properties)
(unclaimed sequence; cDNA and protein sequence of inhibitors of **growth differentiation factor-8** (**GDF-8**) proteins of human and methods for their use)

L58 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:712046 HCAPLUS
DN 136:19078
TI Active vaccination against IL-5 bypasses immunological tolerance and ameliorates experimental asthma
AU Hertz, Marc; Mahalingam, Surendran; Dalum, Iben; **Klysner, Steen**; Mattes, Joerg; Neisig, Anne; **Mouritsen, Soren**; Foster, Paul S.; Gautam, Anand
CS Pharmexa A/S, Horsholm, DK-2970, Den.
SO Journal of Immunology (2001), 167(7), 3792-3799
CODEN: JOIMA3; ISSN: 0022-1767
PB American Association of Immunologists
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Current therapeutic approaches to asthma have had limited impact on the clin. management and resoln. of this disorder. By using a novel vaccine strategy targeting the inflammatory cytokine IL-5, the authors have ameliorated hallmark features of asthma in mouse models. Delivery of a DNA vaccine encoding murine IL-5 modified to contain a promiscuous foreign Th epitope bypasses B cell tolerance to IL-5 and induces neutralizing polyclonal anti-IL-5 Abs. Active vaccination against IL-5 reduces airways inflammation and prevents the development of eosinophilia, both hallmark features of asthma in animal models and humans. The reduced nos. of inflammatory T cells and eosinophils in the lung also result in a marked redn. of Th2 cytokine levels. Th-modified IL-5 DNA vaccination reduces the expression of IL-5 and IL-4 by .apprx.50% in the airways of allergen-challenged mice. Most importantly, Th-modified IL-5 DNA vaccination restores normal bronchial hyperresponsiveness to .beta.-methacholine. Active vaccination against IL-5 reduces key pathol. events assocd. with asthma, such as Th2 cytokine prodn., airways inflammation, and hyperresponsiveness, and thus represents a novel therapeutic approach for the treatment of asthma and other allergic conditions.
ST vaccine interleukin 5 asthma

IT Gene therapy
(DNA vaccine with IL-5 and tetanus toxoids help epitope bypasses immunol. tolerance and ameliorates exptl. asthma)
IT Vaccines
(DNA; active vaccination against IL-5 bypasses immunol. tolerance and ameliorates exptl. asthma)
IT B cell (lymphocyte)
(active vaccination against IL-5 bypasses B cell tolerance and ameliorates exptl. asthma)
IT Asthma
Immune tolerance
(active vaccination against IL-5 bypasses immunol. tolerance and ameliorates exptl. asthma)
IT Eosinophilia
(active vaccination against IL-5 reduces airways inflammation and prevents the development of eosinophilia)
IT T cell (lymphocyte)
(active vaccination against IL-5 reduces inflammatory T cells)
IT Interleukin 10
Interleukin 4
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(active vaccination against IL-5 reduces inflammatory T cells and Th2 cytokine levels)
IT Interleukin 5
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fusion product with tetanus toxoid help epitope; active vaccination against IL-5 bypasses immunol. tolerance and ameliorates exptl. asthma)
IT T cell (lymphocyte)
(helper cell/inducer, TH2; active vaccination against IL-5 reduces inflammatory T cells and Th2 cytokine levels)
IT Bronchi
(hyperresponsiveness; Th-modified IL-5 DNA vaccination restores normal bronchial hyperresponsiveness)
IT Lung, disease
(inflammation; active vaccination against IL-5 reduces airways inflammation and prevents the development of eosinophilia)
IT Toxoids
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tetanus, helper epitope; fusion product with interleukin-5; DNA vaccine with IL-5 and tetanus toxoids bypasses immunol. tolerance and ameliorates exptl. asthma)
IT **126779-14-4**
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fusion product with interleukin-5; DNA vaccine with IL-5 and tetanus toxoids help epitope bypasses immunol. tolerance and ameliorates exptl. asthma)
RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L58 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:265459 HCAPLUS
DN 134:290751
TI **Recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders
IN **Halkier, Torben**; Schambye, Hans Thalsgard; Okkels, Jens Sigurd; Andersen, Kim Vilbour; Nissen, Torben Lauesgaard; Soni, Bobby; Jeppesen, Claus Bekker; Van Den Hazel, Bart
PA Maxygen Aps, Den.
SO PCT Int. Appl., 123 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07K014-525
ICS A61K038-22; A61P029-00; C07K019-00; C07K001-107; C12N015-62; C07K014-52
CC 2-10 (Mammalian Hormones)
Section cross-reference(s): 1, 3
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001025277	A1	20010412	WO 2000-DK563	20001006 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,

ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1226173 A1 20020731 EP 2000-965860 20001006 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL
PRAI DK 1999-1438 A 19991007 <--
DK 1999-1855 A 19991223 <--
DK 2000-1119 A 20000720 <--
WO 2000-DK563 W 20001006 <--

AB The invention relates to a single-chain oligomeric protein antagonist which binds to an extracellular ligand-binding domain of a cellular receptor of a type requiring binding of an oligomeric ligand to two or more receptor subunits to be activated, the protein comprising at least two, typically structurally homologous, receptor-binding sites of which at least one is capable of binding to a ligand-binding domain of the cellular receptor and at least one is incapable of effectively binding to a ligand-binding domain of the cellular receptor, whereby the single-chain oligomeric protein is capable of binding to the receptor, but incapable of activating the receptor; as well as to nucleotide sequences encoding such single-chain oligomeric proteins, expression vectors comprising such a nucleotide sequence, **recombinant** host cells comprising such a nucleotide sequence or expression vector, methods for producing the nucleotide sequences and proteins, pharmaceutical compns. comprising the single-chain oligomeric protein, and use of the single-chain oligomeric protein for the prodn. of medicaments and in therapy. A preferred single-chain antagonist according to the invention is a TNF-.alpha. antagonist. Thus, a single-chain TNF-.alpha. protein comprising of 3 human TNF-.alpha. chains connected by linker peptides was produced with Saccharomyces cerevisiae and shown to be an agonist of the TNF-.alpha. receptor. The same TNF-.alpha. trimer contg. Y87R **mutations** in the first and third copies of TNF-.alpha. was also prepd. This was shown to be a partial TNF-.alpha. agonist and a competitive antagonist of the TNF-.alpha. receptor.

ST single chain tumor necrosis factor alpha trimer **recombinant**; TNF alpha receptor antagonist single chain trimer ligand

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(2, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(3, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(4, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(4-1BB ligand, single-chain multimers; **recombinant**

single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(5, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(6, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(7, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Bone morphogenetic proteins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(8, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Cytokines
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(APRIL, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT CD antigens
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD27, ligand, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Glycoproteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD40-L (antigen CD40 ligand), single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Intestine, disease
(Crohn's; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Antigens
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(OX-40, ligand, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(PIGF, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TRAIL (tumor necrosis factor-related apoptosis-inducing ligand), single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Granulomatous disease
(Wegener's granulomatosis; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Spinal column
(ankylosing spondylitis; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Antiarteriosclerotics
(antiatherosclerotics; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(death domain; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Heart, disease
(infarction; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Brain, disease
(injury; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT CD30 (antigen)
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ligand, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Molecular cloning
(of single-chain antagonist protein DNA; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Tumor necrosis factor receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(p55; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Tumor necrosis factor receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(p75; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Arthritis
(psoriatic arthritis; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Anti-inflammatory agents
Antirheumatic agents

Cachexia
Diabetes mellitus
Myasthenia gravis
Psoriasis
Sjogren's syndrome
(**recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Cytokine receptors
Growth factor receptors
Tumor necrosis factor receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Shock (circulatory collapse)
(septic; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Lymphotoxin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(single-chain multimers contg. .alpha. and .beta. chains of; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Fas ligand
Interleukin 10
Interleukin 16
Platelet-derived growth factors
Tumor necrosis factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Surgery
(stress from; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Lupus erythematosus
(systemic; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Eye, disease
(uveitis; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(with Tyr or Ser/Thr protein kinase activity; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Transforming growth factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.1-, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Transforming growth factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.2-, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory

disorders)

IT Transforming growth factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.3-, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Transforming growth factors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.4-, single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT Interferons
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma., single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 334838-89-0P
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(amino acid sequence; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 334838-90-3P
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 334838-88-9
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 9026-43-1, Serine-threonine kinase 80449-02-1, Protein tyrosine kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(receptors; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 80497-65-0, Muellerian inhibiting factor 102510-92-9, Inhibin A
104625-48-1, Activin A 114949-23-4, Activin AB 115088-91-0, Inhibin B
127464-60-2, Vascular endothelial growth factor 188417-84-7, VEGF C
192662-83-2, Vascular endothelial growth factor B 193363-12-1, VEGF-D
193830-08-9, Growth/differentiation factor 5 207621-35-0, TRANCE
271597-10-5, Growth/differentiation factor 1 **271597-12-7, Growth/differentiation factor 8**
271597-13-8, Growth/differentiation factor 10
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(single-chain multimers; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)

IT 334845-12-4, 6: PN: WO0125434 FIGURE: 4 unclaimed DNA

RL: PRP (Properties)
(unclaimed nucleotide sequence; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)
IT 115089-05-9, 28-171-Lymphotoxin (human protein moiety) 147681-94-5, Lymphotoxin .beta. (human II-23.D7 cell) 334845-09-9 334845-10-2 334845-11-3
RL: PRP (Properties)
(unclaimed protein sequence; **recombinant** single-chain receptor antagonist proteins and their use in treatment of inflammatory disorders)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Angeletti P Ist Richerche Bio; WO 9709064 A 1997 HCAPLUS
(2) Biogen Inc; WO 9640774 A 1996 HCAPLUS
(3) Economides, A; US 5844099 A 1998 HCAPLUS
(4) Howl, J; FASEB JOURNAL 1997, V11(7), P582 MEDLINE
(5) Johnson & Johnson; WO 9640772 A 1996 HCAPLUS
(6) Kyowa Hakko Kogyo Kk; EP 0370205 A 1990 HCAPLUS
(7) McKinnon, M; DRUG NEWS AND PERSPECTIVES, XX, XX 1996, V9, P389 HCAPLUS
(8) Smithkline Beecham Corp; WO 9952877 A 1999 HCAPLUS
(9) Strominger, J; WO 9805684 A 1998 HCAPLUS
(10) Univ Helsinki Licensing; WO 9833917 A 1998 HCAPLUS
(11) Yeda Res & Dev; EP 0526905 A 1993 HCAPLUS

L58 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:64021 HCAPLUS
DN 134:130255
TI Method for **down-regulating GDF-8** activity
IN **Halkier, Torben; Mouritsen, Soren; Klysner, Steen**
PA M and E Biotech A/S, Den.
SO PCT Int. Appl., 110 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07K014-00
CC 15-2 (Immunochemistry)
Section cross-reference(s): 2, 3, 5, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2001005820	A2	20010125	WO 2000-DK413	20000720	<--
	WO 2001005820	A3	20010719			
	W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	EP 1200119	A2	20020502	EP 2000-945671	20000720	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL					
	NO 2001006252	A	20020315	NO 2001-6252	20011219	<--
PRAI	DK 1999-1014	A	19990720	<--		
	US 1999-145275P	P	19990726	<--		
	WO 2000-DK413	W	20000720	<--		

AB Disclosed are novel methods for increasing **muscle** mass by means

of **immunization** against **growth differentiation factor 8** (**GDF-8**, **myostatin**). **Immunization** is preferably effected by administration of analogs of **GDF-8** which are capable of inducing antibody prodn. against homologous **GDF-8**. Esp. preferred as an immunogen is homologous **GDF-8** which has been **modified** by introduction of one single or a few foreign, immunodominant and promiscuous T-cell epitopes while substantially preserving the tertiary structure of the homologous **GDF-8**. Also disclosed are nucleic acid **vaccination** against **GDF-8** and **vaccination** using live **vaccines** as well as methods and means useful for the **vaccination**. Such methods and means include methods for identification of useful immunogenic **GDF-8** analogs, methods for the prepn. of analogs and pharmaceutical formulations, as well as nucleic acid fragments, vectors, transformed cells, polypeptides and pharmaceutical formulations.

ST **growth differentiation factor 8** **muscle** mass; **vaccine** GDF8 farm animal **muscle** mass

IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CS (circumsporozoite); **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Hematopoietin receptors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(FLT3 receptors; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Heat-shock proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 70; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Heat-shock proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 90; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MHC (major histocompatibility complex), class II; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Diglycerides
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(N-acyl; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(P2; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(P30; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Animal cell line
(S2; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Animal cell line
(SF; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Encapsulants
(adjuvant; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT DNA
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adjuvant; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Immunostimulants
(adjuvants, ISCOMs; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Immunostimulants
(adjuvants; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(anal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Immune tolerance
(auto-; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(autoantigens; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(buccal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Reagents
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(calcium-pptg.; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(carriers; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Animal
Animal cell line
Antigen-presenting cell

B cell (lymphocyte)
Bacillus (bacterium genus)
Bacteriophage
Bacterium (genus)
Cattle
Chicken (Gallus domesticus)
Cosmids
Epitopes
Escherichia
Escherichia coli
Eukaryote (Eukaryotae)
Fungi
Genetic vectors
Genome
Immunostimulants
Influenza virus
Insect (Insecta)
Livestock
Micelles
Microorganism
Mycobacterium
Mycobacterium bovis
Particles
Plant cell
Plasmids
Plasmodium falciparum
Poultry
Poxviridae
Prokaryote
Protein sequences
Protozoa
Salmonella
Sheep
Swine
Turkey
Vaccines
Vaccinia virus
Virus vectors
Yeast
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Antibodies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Fusion proteins (**chimeric** proteins)
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Calreticulin
Carbohydrates, biological studies
Cytokines
Haptens
Heat-shock proteins
Hemagglutinins
Hormones, animal, biological studies
Interleukin 1

Interleukin 12
Interleukin 13
Interleukin 15
Interleukin 2
Interleukin 4
Interleukin 6
Leader peptides
Lipids, biological studies
Nucleic acids
Polymers, biological studies
Promoter (genetic element)
Receptors
Saponins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **Mutation**
(**deletion**; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Toxoids
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(diphtheria; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Glycophosphoproteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(endoplasmins; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(epidural; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT T cell (lymphocyte)
(epitope; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT T cell (lymphocyte)
(helper cell, epitope; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Phosphoproteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hsc 70 (heat-shock cognate, 70,000-mol.-wt.); **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Carriers
Molecules
(inert; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(**injections**, i.m.; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems

(**injections**, i.v.; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(**injections**, s.c.; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **Mutation**
(**insertion**; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(intraarterial; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(intracranial; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(intracutaneous; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(intradermal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(liposomes; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Animal cell
(mammalian; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **Muscle**
(mass; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Chromosome
(minichromosomes; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(oil formulation; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(oral; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(parenterals; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(peritoneal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Glycolipoproteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(phosphatidylinositol-contg.; **chimeric vaccines** for

down-regulation of **GDF-8** activity
and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(spinal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(subdermal; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Drug delivery systems
(sublingual; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **Mutation**
(**substitution**; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(surface; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Genetic element
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(terminator; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Toxoids
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tetanus; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(transfection-facilitating; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Lymph node
(virtual lymph node device; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT Interferons
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma.; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT 7429-90-5D, Aluminum, derivs., biological studies
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adjuvant; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **161135-86-0, Growth/differentiation factor 8** (human) **211433-36-2, Growth/differentiation factor 8** (cattle)
321893-41-8 321893-42-9 321893-43-0 321893-44-1 321893-45-2 321893-46-3

321893-47-4 321893-48-5 321893-49-6
321893-50-9 321893-51-0
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **271597-12-7, Growth differentiation factor 8 321856-81-9 321856-82-0**
321856-83-1 321856-84-2 321856-85-3
321856-86-4 321856-87-5 321856-88-6
321856-89-7 321856-90-0 321856-91-1
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT 112-18-5, DDA 1398-61-4, Chitin 3458-28-4, Mannose 9012-76-4, Chitosan 9036-88-8, Mannan 83869-56-1, GM-CSF
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT 7440-70-2, Calcium, biological studies
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pptg. agent; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

IT **161135-84-8 199810-42-9, Myostatin** (cattle **muscle** gene MSTN) **199810-43-0, Myostatin** (chicken **muscle** gene MSTN) **199810-44-1, Myostatin** (sheep **muscle** gene MSTN) **199810-45-2, Myostatin** (swine **muscle** gene MSTN) **199810-46-3 199810-47-4, Myostatin** (turkey **muscle** gene MSTN) **199810-48-5, Myostatin** (Danio rerio **muscle** gene MSTN)
RL: PRP (Properties)
(unclaimed protein sequence; method for **down-regulating GDF-8** activity)

IT **126779-13-3 126779-14-4**
RL: PRP (Properties)
(unclaimed sequence; method for **down-regulating GDF-8** activity)

IT 9005-80-5, Inulin
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma.-; **chimeric vaccines** for **down-regulation** of **GDF-8** activity and for increase of **muscle** mass in farm animals)

L58 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:772763 HCAPLUS
DN 133:334046
TI Autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy
IN **Klysner, Steen**
PA M & E Biotech A/S, Den.
SO PCT Int. Appl., 172 pp.
CODEN: PIXXD2
DT Patent
LA English

IC ICM C12N015-24
ICS A61K039-00; A61K039-385; A61K039-39; A61K031-70; A61K048-00; C07K014-54; C12N001-21; C12N001-19; C12N005-10; C12N015-70; C12N015-86; G01N033-68; A61P037-00; A61K039-08
CC 15-2 (Immunochemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000065058	A1	20001102	WO 2000-DK205	20000419 <--
	W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1173573	A1	20020123	EP 2000-920423	20000419 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	NO 2001005021	A	20011221	NO 2001-5021	20011015 <--
PRAI	DK 1999-552	A	19990423 <--		
	US 1999-132811P	P	19990506 <--		
	WO 2000-DK205	W	20000419 <--		

AB The present invention relates to improvements in therapy and prevention of conditions characterized by an elevated level of eosinophil leukocytes, i.e., conditions such as asthma and other chronic allergic diseases. A method is provided for down-**regulating** interleukin 5 (IL5) by enabling the prodn. of antibodies against IL5 thereby reducing the level of activity of eosinophils. The invention also provides for methods of producing modified IL5 useful in this method as well as for the modified IL5 as such. Also encompassed by the present invention are nucleic acid fragments encoding modified IL5 as well as vectors incorporating these nucleic acid fragments and host cells and cell lines transformed therewith. The invention also provides for a method for the identification of IL5 analogs which are useful in the method of the invention as well as for compns. comprising modified IL5 or comprising nucleic acids encoding the IL5 analogs. The preferred embodiment of the present invention entails the use of variants of IL5, where foreign T helper epitopes are introduced so as to induce prodn. of cross-reactive antibodies capable of binding to autologous IL5. Thus, genes encoding human and mouse IL5 with tetanus toxoid P2 or P30 epitope replacing loops 1, 2 or 3 were prepd. These genes were expressed in Drosophila S2 cells. Both protein and DNA were used to vaccinate mice. Anti-IL5 antibodies were produced.

ST autovaccine interleukin 5 tetanus toxoid chimera asthma allergy treatment
IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(CS (circumsporozoite), interleukin 5 analog contg. epitope of P. falciparum; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Hematopoietin receptors
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(FLT3 receptors, interleukin 5 analog contg. ligand for; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Heat-shock proteins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(HSP 70, interleukin 5 analog contg.; autovaccines for down-

regulating interleukin 5 activity and treatment of asthma and allergy)

IT Heat-shock proteins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(HSP 90, interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Interleukin 5
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(analogs; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Allergy inhibitors
Antiasthmatics
Vaccines
(autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Interleukin 5
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Toxoids
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(diphtheria, interleukin 5 analog contg. epitope of; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Glycophosphoproteins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(endoplasmins, interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Gene
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(for interleukin 5 analog; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT T cell (lymphocyte)
(helper cell, interleukin 5 analog contg. target for; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Phosphoproteins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(hsc 70 (heat-shock cognate, 70,000-mol.-wt.), interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Hemagglutinins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(interleukin 5 analog contg. epitope of flu virus; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT Antigen-presenting cell
B cell (lymphocyte)
(interleukin 5 analog contg. target for; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and

allergy)
IT Immunostimulants
(interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Calreticulin
Cytokines
Heat-shock proteins
Hormones, animal, biological studies
Interleukin 1
Interleukin 12
Interleukin 13
Interleukin 15
Interleukin 2
Interleukin 4
Interleukin 6
Lipids, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Genetic vectors
(interleukin 5 analog-encoding; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Animal cell line
Bacillus (bacterium genus)
Cell
Escherichia
Escherichia coli
Mycobacterium
Mycobacterium BCG
Salmonella
(interleukin 5 analog-producing; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT DNA sequences
(of genes for human and mouse interleukin 5-tetanus toxoid fusion proteins)
IT Protein sequences
(of human and mouse interleukin 5-tetanus toxoid fusion proteins)
IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(surface, interleukin 5 analog contg. binding partner for B cell or APC; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Toxoids
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(tetanus, interleukin 5 analog contg. epitope of; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Vaccinia virus
(vector, interleukin 5 analog-encoding; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT Interferons
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(.gamma., interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)
IT **126779-13-3 126779-14-4** 303779-77-3

RL: PRP (Properties)
(Unclaimed; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT 303810-21-1P 303810-22-2P 303810-23-3P 303810-24-4P 303810-25-5P
303810-26-6P 303810-27-7P 303810-28-8P 303810-29-9P 303810-30-2P
303810-32-4P 303810-33-5P 303810-34-6P 303810-35-7P 303810-36-8P
303810-37-9P 303810-38-0P 303810-39-1P 303810-40-4P 303810-41-5P
303810-60-8P 303810-67-5P 303810-69-7P 303810-71-1P 303810-73-3P
303810-79-9P 303810-81-3P 303810-83-5P
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; of genes for human and mouse interleukin 5-tetanus toxoid fusion proteins)

IT 112759-45-2DP, Interleukin 5 (human clone pEDFH-1 protein moiety reduced), analogs 303810-31-3DP, Interleukin 5 (Mus musculus), analogs
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; of genes for human and mouse interleukin 5-tetanus toxoid fusion proteins)

IT 57-10-3, Palmitic acid, biological studies 544-63-8, Myristic acid, biological studies 83869-56-1, GM-CSF
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(interleukin 5 analog contg.; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT 303810-59-5 303810-61-9 303810-62-0 303810-63-1 303810-64-2
303810-65-3 303810-66-4 303810-68-6 303810-70-0 303810-72-2
303810-74-4 303810-75-5 303810-76-6 303810-77-7 303810-78-8
303810-80-2 303810-82-4
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence; of genes for human and mouse interleukin 5-tetanus toxoid fusion proteins)

IT 264134-77-2 303815-99-8
RL: PRP (Properties)
(unclaimed nucleotide sequence; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

IT 161147-59-7 303779-78-4
RL: PRP (Properties)
(unclaimed sequence; autovaccines for down-**regulating** interleukin 5 activity and treatment of asthma and allergy)

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L58 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2003 ACS
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DN 132:292701
TI Novel methods for therapeutic vaccination

IN Steinaa, Lucilla; **Mouritsen, Soren**; Nielsen, Klaus Gregorious; Haaning, Jesper; Leach, Dana; Dalum, Iben; Gautam, Anand; Birk, Peter; Karlsson, Gunilla
PA M Amp E Biotech A/s, Den.
SO PCT Int. Appl., 220 pp.
CODEN: PIXXD2
DT Patent
LA English
IC A61K039-00
CC 15-2 (Immunochemistry)
Section cross-reference(s): 3, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000020027	A2	20000413	WO 1999-DK525	19991005 <--
	WO 2000020027	A3	20001012		
	W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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	AU 9958510	A1	20000426	AU 1999-58510	19991005 <--
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	EP 1117421	A2	20010725	EP 1999-945967	19991005 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, IE, SI, LT, LV, FI, RO				
	JP 2002526419	T2	20020820	JP 2000-573386	19991005 <--
	NO 2001001586	A	20010531	NO 2001-1586	20010328 <--
PRAI	DK 1998-1261	A	19981005 <--		
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AB A method is disclosed for inducing cell-mediated immunity against cellular antigens. More specifically, the invention provides for a method for inducing cytotoxic T-lymphocyte immunity against weak antigens, notably self-proteins. The method entails that antigen presenting cells are induced to present at least one CTL epitope of the weak antigen and at the same time presenting at least one foreign T-helper lymphocyte epitope. In a preferred embodiment, the antigen is a cancer specific antigen, e.g. prostate specific membrane antigen (PSM), Her2, or FGF8b. The method can be exercised by using traditional polypeptide vaccination, but also by using live attenuated vaccines or nucleic acid vaccination. The invention furthermore provides immunogenic analogs of PSM, Her2 and FGF8b, as well as nucleic acid mols. encoding these analogs. Also vectors and transformed cells are disclosed. The invention also provides for a method for identification of immunogenic analogs of weak or non-immunogenic antigens.

ST weak antigen vaccine cytotoxic T lymphocyte; tumor antigen T cell epitope vaccine
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(17-1A; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(AM-1; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(APC; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(APRIL; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BAGE; weak antigens inserted with foreign T cell epitope as vaccines)
IT Chemokines
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(C-X-C, Ena78; weak antigens inserted with foreign T cell epitope as vaccines)
IT CD antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD33; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD40-L (antigen CD40 ligand); weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD52; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CDC27; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CO17-1A; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CS (circumsporozoite), epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(DCC (deleted in colorectal cancer); weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(DcR3; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(E6; weak antigens inserted with foreign T cell epitope as vaccines)
IT Transcription factors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(E7; weak antigens inserted with foreign T cell epitope as vaccines)
IT Hematopoietin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(FLT3 receptors; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(GP1; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL

(Biological study); USES (Uses)
(H-CAM (homing cell adhesion mol.); weak antigens inserted with foreign T cell epitope as vaccines)

IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(H-ras; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HMTV; weak antigens inserted with foreign T cell epitope as vaccines)

IT Heat-shock proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 70; weak antigens inserted with foreign T cell epitope as vaccines)

IT Heat-shock proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 90; weak antigens inserted with foreign T cell epitope as vaccines)

IT Immunoglobulin receptors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(IgE type II; weak antigens inserted with foreign T cell epitope as vaccines)

IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(K-ras; weak antigens inserted with foreign T cell epitope as vaccines)

IT Lipoprotein receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(LDL, fusion with FUT or fucosyltransferase; weak antigens inserted with foreign T cell epitope as vaccines)

IT Glycoproteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MCP (membrane cofactor protein); weak antigens inserted with foreign T cell epitope as vaccines)

IT Multidrug resistance proteins
Multidrug resistance proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(MDR1; weak antigens inserted with foreign T cell epitope as vaccines)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MHC (major histocompatibility complex), class I; weak antigens inserted with foreign T cell epitope as vaccines)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MHC (major histocompatibility complex), class II; weak antigens inserted with foreign T cell epitope as vaccines)

IT Diglycerides
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(N-acyl; weak antigens inserted with foreign T cell epitope as vaccines)

IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(N-ras; weak antigens inserted with foreign T cell epitope as vaccines)

IT Glycoproteins, specific or class
Glycoproteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(P170; weak antigens inserted with foreign T cell epitope as vaccines)

IT Phosphoproteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(P210bcr-c-abl; weak antigens inserted with foreign T cell epitope as vaccines)
IT Prostate-specific antigen
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(PSA and PSM; weak antigens inserted with foreign T cell epitope as vaccines)
IT Hemopoietins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Progenipoietin; weak antigens inserted with foreign T cell epitope as vaccines)
IT Transcription factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Rb; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(SART-1; weak antigens inserted with foreign T cell epitope as vaccines)
IT Gene, animal
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(SSX; weak antigens inserted with foreign T cell epitope as vaccines)
IT Transcription factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(STAT3; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mucins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(STn antigen; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TAG-72 (tumor-assocd. glycoprotein 72); weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TPA (tissue protein antigen); weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TRP-1 (tyrosinase-related protein 1); weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TRP-2 (tyrosinase-related protein 2); weak antigens inserted with foreign T cell epitope as vaccines)
IT Polyoxyalkylenes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adjuvant; weak antigens inserted with foreign T cell epitope as vaccines)
IT Immunostimulants
(adjuvants, Freund's incomplete; weak antigens inserted with foreign T cell epitope as vaccines)
IT Immunostimulants
(adjuvants, Freund's; weak antigens inserted with foreign T cell epitope as vaccines)
IT Immunostimulants
(adjuvants, ISCOMs; weak antigens inserted with foreign T cell epitope as vaccines)
IT Immunostimulants
(adjuvants, Ribi; weak antigens inserted with foreign T cell epitope as vaccines)
IT Immunostimulants
(adjuvants; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems

(anal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Animal virus
Bacteria (Eubacteria)
Parasite
(antigen; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bcl-2; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(buccal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Transcription factors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(c-myc; weak antigens inserted with foreign T cell epitope as vaccines)
IT Diagnosis
(cancer; weak antigens inserted with foreign T cell epitope as vaccines)
IT T cell (lymphocyte)
(cytotoxic, epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mutation
(deletion; weak antigens inserted with foreign T cell epitope as vaccines)
IT Neoplasm
(diagnosis; weak antigens inserted with foreign T cell epitope as vaccines)
IT Toxoids
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(diphtheria, epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycophosphoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(endoplasmins; weak antigens inserted with foreign T cell epitope as vaccines)
IT Toxins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(enterotoxins, heat-labile; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(epidural; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mucins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(episialins; weak antigens inserted with foreign T cell epitope as vaccines)
IT B cell (lymphocyte)
T cell (lymphocyte)
(epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Hemagglutinins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Functional groups
(farnesyl; weak antigens inserted with foreign T cell epitope as vaccines)
IT Receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(folate; weak antigens inserted with foreign T cell epitope as

vaccines)
IT Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fragments; weak antigens inserted with foreign T cell epitope as vaccines)
IT Vascular endothelial growth factor receptors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(gene KDR; weak antigens inserted with foreign T cell epitope as vaccines)
IT Functional groups
(geranyl-geranyl; weak antigens inserted with foreign T cell epitope as vaccines)
IT Protein motifs
(glycosylation site; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(gp100; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(gp15; weak antigens inserted with foreign T cell epitope as vaccines)
IT Sialoglycoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(gp75; weak antigens inserted with foreign T cell epitope as vaccines)
IT T cell (lymphocyte)
(helper cell, epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Phosphoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hsc 70 (heat-shock cognate, 70,000-mol.-wt.); weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(injections, s.c.; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mutation
(insertion; weak antigens inserted with foreign T cell epitope as vaccines)
IT Interleukin receptors
Interleukin receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(interleukin 13; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(intracranial; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(intracutaneous; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(intradermal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Hemolysins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(listeriolysins; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mammaglobin; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(melanoma-assocd., MAGE; weak antigens inserted with foreign T cell

epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(melanoma-assocd., Melan-A/MART-1; weak antigens inserted with foreign T cell epitope as vaccines)
IT Transferrins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(melanotransferrins; weak antigens inserted with foreign T cell epitope as vaccines)
IT Chromosome
(minichromosomes; weak antigens inserted with foreign T cell epitope as vaccines)
IT Chemicals
(modification; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mucins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mucin 2, 3 and 4; weak antigens inserted with foreign T cell epitope as vaccines)
IT Functional groups
(myristyl; weak antigens inserted with foreign T cell epitope as vaccines)
IT DNA
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(naked; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mammary gland
Prostate gland
(neoplasm; weak antigens inserted with foreign T cell epitope as vaccines)
IT Microorganism
(non-pathogenic; weak antigens inserted with foreign T cell epitope as vaccines)
IT Liquids
(oils formulation; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(oral; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(p15; weak antigens inserted with foreign T cell epitope as vaccines)
IT Functional groups
(palmitoyl; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(parenterals; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(peritoneal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycolipoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(phosphatidylinositol-contg.; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(probasins; weak antigens inserted with foreign T cell epitope as vaccines)
IT Glycoproteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(prostateins; weak antigens inserted with foreign T cell epitope as vaccines)

IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(self; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(spinal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(subdermal; weak antigens inserted with foreign T cell epitope as vaccines)
IT Drug delivery systems
(sublingual; weak antigens inserted with foreign T cell epitope as vaccines)
IT Mutation
(substitution; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(surface; weak antigens inserted with foreign T cell epitope as vaccines)
IT Genetic element
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(terminator; weak antigens inserted with foreign T cell epitope as vaccines)
IT Toxoids
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tetanus, epitope; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(transfection-facilitating; weak antigens inserted with foreign T cell epitope as vaccines)
IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(transmembrane, mesothelin; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., G250; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., GAGE; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., KIAA0205 bladder carcinoma antigen; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., MAP17; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., MIC A/B; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., MUM-1; weak antigens inserted with foreign T cell epitope as vaccines)
IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(tumor-assocd., NY-ESO-1; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., PRAME; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., Pmel-17; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., RCAS1; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., ZAG; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., p16INK4; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd.; weak antigens inserted with foreign T cell epitope as vaccines)

IT Antigens
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-rejection, RAGE-1; weak antigens inserted with foreign T cell epitope as vaccines)

IT Complement receptors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(type 1; weak antigens inserted with foreign T cell epitope as vaccines)

IT Complement receptors
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(type 2; weak antigens inserted with foreign T cell epitope as vaccines)

IT Animal
Animal cell line
Antigen-presenting cell
Antitumor agents
Bacteriophage
Carriers
Cosmids
DNA sequences
Dendritic cell
Encapsulation
Epitopes
Immunotherapy
Influenza virus
Latex
Liposomes
Macrophage
Micelles
Molecular cloning
Mycobacterium
Particles
Plasmids
Plasmodium falciparum

Protein sequences
Quillaja saponaria
Vaccines
Virus
Virus vectors
(weak antigens inserted with foreign T cell epitope as vaccines)

IT Gene, animal
Promoter (genetic element)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(weak antigens inserted with foreign T cell epitope as vaccines)

IT CA 125 (carbohydrate antigen)
CD19 (antigen)
CD20 (antigen)
CD22 (antigen)
CD44 (antigen)
CD45 (antigen)
CD5 (antigen)
CD59 (antigen)
Carcinoembryonic antigen
Enzymes, biological studies
Epidermal growth factor receptors
Haptens
.alpha.-Fetoproteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)

IT Antibodies
Antigens
CD40 (antigen)
CTLA-4 (antigen)
Calreticulin
Carbohydrates, biological studies
Cytokines
DNA
Heat-shock proteins
Insulin-like growth factor I receptors
Interleukin 1
Interleukin 12
Interleukin 13
Interleukin 15
Interleukin 2
Interleukin 4
Interleukin 6
Ki-67 antigen
Lipid A
Lipids, biological studies
Osteonectin
Plastics, biological studies
Platelet-derived growth factors
Polymers, biological studies
Receptors
Saponins
Toxins
Tumor necrosis factors
neu (receptor)
p53 (protein)
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)

IT Transforming growth factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.alpha.-; weak antigens inserted with foreign T cell epitope as vaccines)

IT Catenins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.-; weak antigens inserted with foreign T cell epitope as vaccines)

IT Transforming growth factors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.-; weak antigens inserted with foreign T cell epitope as vaccines)

IT Interferons
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma.; weak antigens inserted with foreign T cell epitope as vaccines)

IT 39391-18-9
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(2; weak antigens inserted with foreign T cell epitope as vaccines)

IT 62031-54-3, FGF
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(8a and 8b isoforms; weak antigens inserted with foreign T cell epitope as vaccines)

IT 264178-47-4P
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(P2 epitope gene; weak antigens inserted with foreign T cell epitope as vaccines)

IT **126779-13-3P**
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(P2 epitope; weak antigens inserted with foreign T cell epitope as vaccines)

IT 264185-70-8P
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(P30 epitope gene; weak antigens inserted with foreign T cell epitope as vaccines)

IT **126779-14-4P**
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(P30 epitope; weak antigens inserted with foreign T cell epitope as vaccines)

IT 99-20-7D, Trehalose, diester 7429-90-5, Aluminum, biological studies 9004-54-0, Dextran, biological studies 9005-25-8, Starch, biological studies 25322-68-3 53678-77-6, Muramyl dipeptide
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adjuvant; weak antigens inserted with foreign T cell epitope as vaccines)

IT 148997-75-5, Androgen-induced growth factor (mouse clone pSC17 precursor reduced) 264179-58-0 264179-59-1, Neu (receptor) (human) 264179-62-6 264179-64-8 264179-65-9 264179-66-0 264179-67-1 264179-68-2
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; weak antigens inserted with foreign T cell epitope as vaccines)

IT 3458-28-4, Mannose 9036-88-8, Mannan
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(binding partner; weak antigens inserted with foreign T cell epitope as vaccines)

IT 56093-23-3
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fusion with LDL receptor; weak antigens inserted with foreign T cell epitope as vaccines)
IT 125978-95-2, Nitric oxide synthase
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inducible; weak antigens inserted with foreign T cell epitope as vaccines)
IT 9030-23-3, Thymidine phosphorylase
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhibitor; weak antigens inserted with foreign T cell epitope as vaccines)
IT 141907-41-7, Matrix metalloproteinase
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(isoforms; weak antigens inserted with foreign T cell epitope as vaccines)
IT 100040-73-1, DNA (human clone .lambda.HER2-436 gene HER2 receptor cDNA)
264179-57-9 264179-60-4 264179-61-5 264179-63-7
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; weak antigens inserted with foreign T cell epitope as vaccines)
IT 52-90-4, Cysteine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(residue; weak antigens inserted with foreign T cell epitope as vaccines)
IT 217865-15-1 259127-00-9, 9: PN: US6027895 SEQID: 10 unclaimed DNA
264179-74-0 264179-76-2 264179-77-3
RL: PRP (Properties)
(unclaimed nucleotide sequence; novel methods for therapeutic vaccination)
IT 179920-34-4
RL: PRP (Properties)
(unclaimed protein sequence; novel methods for therapeutic vaccination)
IT 64134-30-1 137219-78-4 264134-74-9 264134-75-0 264134-76-1
264134-77-2 264179-75-1
RL: PRP (Properties)
(unclaimed sequence; novel methods for therapeutic vaccination)
IT 264134-70-5P 264134-71-6P 264134-72-7P 264134-73-8P 264134-78-3P
264224-61-5P 264224-76-2P
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)
IT 71965-46-3, Cathepsins 99085-47-9, Complement decay-accelerating factor
147014-97-9, Cyclin-dependent kinase 4 179241-78-2, Caspase 8
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)
IT 251541-10-3, Human Her2 protein (59-73) 251542-12-8, Human Her2 protein (465-479) 264617-99-4, Human PSM (87-108) 264618-03-3, Human PSM (210-230) 264618-06-6, Human PSM (269-289) 264618-07-7, Human PSM (298-324) 264618-08-8, Human PSM (442-465) 264618-09-9, Human PSM (488-514) 264618-23-7, Human PSM (598-630) 264619-18-3, Human PSM (643-662) 264619-84-3, Human PSM (672-699) 264620-57-7, Human Her2 protein (5-25) 264620-84-0, Human Her2 protein (103-117) 264621-04-7, Human Her2 protein (149-163) 264621-94-5, Human Her2 protein (210-224) 264622-06-2, Human Her2 protein (250-264) 264622-08-4, Human Her2 protein (325-339) 264622-09-5, Human Her2 protein (369-383) 264622-23-3, Human Her2 protein (579-593) 264624-69-3, Human Her2 protein (632-652) 264624-79-5, Human Her2 protein (653-667) 264624-80-8, Human Her2 protein (661-675) 264625-23-2, Human Her2 protein (695-709) 264625-25-4, Human Her2 protein (72-86) 264625-36-7,

Human Her2 protein (146-160) 264625-37-8, Human Her2 protein (221-235) 264625-38-9, Human Her2 protein (257-271) 264625-51-6, Human FGF8b protein (1-54) 264626-02-0, Human FGF8b protein (55-58) 264626-17-7, Human FGF8b protein (178-215) 264626-69-9, Human FGF8b protein (63-68) 264626-82-6, Human FGF8b protein (72-76) 264626-84-8, Human FGF8b protein (85-91) 264626-85-9, Human FGF8b protein (95-102) 264626-86-0, Human FGF8b protein (106-111) 264626-87-1, Human FGF8b protein (115-120) 264627-05-6, Human FGF8b protein (128-134) 264627-07-8, Human FGF8b protein (138-144) 264627-09-0, Human FGF8b protein (149-154) 264627-10-3, Human FGF8b protein (158-162) 264627-11-4, Human FGF8b protein (173-177) 264627-12-5, Human FGF8b protein (26-45)
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)

IT 3700-67-2 9001-91-6, Plasminogen 9002-10-2, Tyrosinase 9002-61-3, Human chorionic gonadotropin 9032-22-8, Mox1 oxidase 9034-40-6, Gonadotropin-releasing hormone 9081-34-9, 5.alpha. Reductase 50812-37-8, Glutathione S-transferase 60748-06-3, Gastrin 17 62010-37-1, GD3 65988-71-8, GD2 66456-69-7, GM4 66594-14-7, Quil A 80043-53-4, Gastrin-releasing peptide 83588-90-3, N-Acetylglucosaminyltransferase V 83869-56-1, GM-CSF 89800-66-8, Heparanase 120178-12-3, Telomerase 127464-60-2, Vascular endothelial growth factor 140208-23-7, Plasminogen activator inhibitor-1 141256-04-4, QS21
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(weak antigens inserted with foreign T cell epitope as vaccines)

IT 61512-21-8, Thymosin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta. 15; weak antigens inserted with foreign T cell epitope as vaccines)

IT 9005-80-5, Inulin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma.-; weak antigens inserted with foreign T cell epitope as vaccines)

L58 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:191227 HCAPLUS
DN 132:235902
TI Down-**regulating** osteoprotegerin ligand activity with autovaccines
IN **Halkier, Torben**; Haaning, Jesper
PA M & E Biotech A/S, Den.
SO PCT Int. Appl., 110 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-62
ICS C12N015-86; C12N015-12; C12N005-10; C12N001-21; C12N001-19; C07K014-705; A61K039-00; A61K031-713; G01N033-50
CC 15-2 (Immunochemistry)
Section cross-reference(s): 3
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000015807	A1	20000323	WO 1999-DK481	19990913 <--

W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,

CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2343654 AA 20000323 CA 1999-2343654 19990913 <--
AU 9956173 A1 20000403 AU 1999-56173 19990913 <--
EP 1114166 A1 20010711 EP 1999-942778 19990913 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO
JP 2002525060 T2 20020813 JP 2000-570334 19990913 <--
NO 2001001304 A 20010515 NO 2001-1304 20010314 <--
PRAI DK 1998-1164 A 19980915 <--
US 1998-102896P P 19981002 <--
WO 1999-DK481 W 19990913 <--

AB The invention provides a novel method for down-**regulating** the biol. activity of osteoprotegerin ligand (OPGL, also known as TRANCE) thereby rendering possible the treatment/amelioration of diseases characterized by excessive loss of bone mass, e.g. osteoporosis. Down-**regulation** is effected by inducing an immune response against OPGL in an individual in need thereof. Immune responses can be raised by classical immunization with immunogenic variants of OPGL or by nucleic acid immunization where the nucleic acids encode the OPGL variant. Immunogenic compns. are constructed comprising residues 158-316 of murine OPGL fused to His tags, for ease of purifn., and, optionally, contg. inserted T cell epitope peptides from tetanus toxoid (P2 or P30 epitopes), diphtheria toxoid, influenza virus hemagglutinin, or plasmodium falciparum circumsporozoite protein. The invention pertains to compns., polypeptides and nucleic acids useful in the invention, as well as to vectors and transformed host cells useful in the prepn. thereof.

ST osteoprotegerin ligand **downregulation** vaccine; sequence osteoprotegerin ligand cDNA mouse human; immunization osteoprotegerin ligand nucleic acid; osteoporosis treatment osteoprotegerin ligand autovaccine

IT Antigens
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(CS (circumsporozoite), T cell epitopes fusion products with Plasmodium falciparum; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Heat-shock proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 70, co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Heat-shock proteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HSP 90, co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Hemagglutinins
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(T cell epitopes fusion products with influenza virus hemagglutinin; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Lymph node
(artificial; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Calreticulin
Cytokines
Heat-shock proteins
Hormones, animal, biological studies
Interleukin 12
Interleukin 13
Interleukin 15
Interleukin 4
Interleukin 6
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Toxoids
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(diphtheria, T cell epitopes fusion products; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Cosmids
DNA sequences
Plasmid vectors
Protein sequences
Vaccines
Virus vectors
(down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Synthetic gene
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Glycophosphoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(endoplasmins, co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT cDNA sequences
(for murine and human osteoprotegerin ligands; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Phosphoproteins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hsc 70 (heat-shock cognate, 70,000-mol.-wt.), co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Animal cell
(insect, transformed; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Animal cell
(mammalian, transformed; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Chromosome
(minichromosomes, vectors; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Immunization
(nucleic acid; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Bone
(resorption, treatment of excess; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Toxoids
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(tetanus, T cell epitopes fusion products; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Osteoporosis
(therapeutic agents; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Bacteria (Eubacteria)
Fungi
Plant cell
Protozoa
Yeast
(transformed; down-**regulating** osteoprotegerin ligand activity with autovaccines)

IT Bacteriophage
(vectors; down-**regulating** osteoprotegerin ligand activity

with autovaccines)
IT Interferons
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.gamma., co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 261754-98-7P 261755-01-5P 261755-03-7P 261755-08-2P 261755-10-6P 261755-12-8P 261755-14-0P
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 198086-51-0, GenBank AB008426-derived protein GI 3041782 200145-93-3
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amino acid sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 83869-56-1, Granulocyte-macrophage colony stimulating factor
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(co-expression of; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 207621-35-0P, Osteoclast differentiation factor
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 261754-99-8P 261755-00-4P 261755-02-6P 261755-07-1P 261755-09-3P 261755-11-7P 261755-13-9P
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 206615-21-6, GenBank AB008426 206826-73-5 206826-74-6, GenBank AF053713
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT 261755-22-0 261755-23-1 261755-24-2 261755-25-3 261755-26-4 261755-27-5 261755-28-6 261755-29-7 261755-30-0 261755-31-1 261755-32-2 261755-33-3 261755-34-4
RL: PRP (Properties)
(unclaimed nucleotide sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
IT **126779-13-3 126779-14-4**
RL: PRP (Properties)
(unclaimed protein sequence; down-**regulating** osteoprotegerin ligand activity with autovaccines)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Amgen Inc; WO 9723614 A 1997 HCAPLUS
(2) Amgen Inc; WO 9846751 A 1998 HCAPLUS
(3) Fuller, K; J EXP MED 1998, V188(5), P997 HCAPLUS
(4) Immunex Corp; WO 9828426 A 1998 HCAPLUS
(5) Schering Corp; WO 9825958 A 1998 HCAPLUS
(6) Univ Columbia; WO 9720063 A 1997 HCAPLUS
(7) Univ Utah; WO 9527058 A 1995 HCAPLUS

L58 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:68486** HCAPLUS
DN **132:118343**
TI **Growth differentiation factor GDF-8** promoter and its uses for tissue-specific gene expression and identification of **GDF** expression **regulators**

IN Liang, Li-Fang
PA Metamorphix, Inc., USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07K014-00
CC 3-2 (Biochemical Genetics)
Section cross-reference(s): 2, 13
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2000004051	A2	20000127	WO 1999-US16026	19990715	<--
	WO 2000004051	A3	20000525			
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	CA 2333465	AA	20000127	CA 1999-2333465	19990715	<--
	AU 9955427	A1	20000207	AU 1999-55427	19990715	<--
	EP 1097233	A2	20010509	EP 1999-941954	19990715	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
	JP 2002520043	T2	20020709	JP 2000-560157	19990715	<--
PRAI	US 1998-92865P	P	19980715	<--		
	US 1999-123270P	P	19990308	<--		
	WO 1999-US16026	W	19990715	<--		

AB The complete nucleotide sequences of **GDF** promoters (e.g., **GDF-8** promoters) from human, mouse, chicken, and pig are described. Also described are methods of using the GDF promoters to **regulate** tissue-specific, particularly **muscle**- specific gene expression, and to identify compds. which **regulate** GDF expression. Expression vector constructs comprising the **GDF-8** gene promoter fused to a gene of interest, possibly a reporter gene are provided.

ST tissue specific gene expression GDF **regulator**; sequence growth differentiation factor GDF8 promoter human chicken pig

IT Gene
(expression, **muscle**-specific; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Chicken (Gallus domesticus)
Mouse (Mus musculus)
Swine
(**growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Growth factors, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Reporter gene
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(**growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Drug delivery systems
(**injections**, of **GDF** promoter into a **muscle** cell or transgenic animal; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Transformation, genetic
(microinjection; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Growth factors, animal
Growth inhibitors, animal
RL: ANT (Analyte); ANST (Analytical study)
(of **GDF** expression; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Promoter (genetic element)
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(of **growth differentiation factor GDF-8** gene; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT DNA sequences
(of **growth differentiation factor GDF-8** promoter; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT Genetic vectors
(pGL3-0.65; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT **Muscle**
(transfection of; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT **256216-14-5P 256216-15-6P 256216-16-7P 256216-17-8P 256216-18-9P 256216-19-0P 256216-20-3P 256216-21-4P**
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(nucleotide sequence; **growth differentiation factor GDF-8** promoter and uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

IT 256216-88-3, 3: PN: WO0004051 SEQID: 3 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; **growth differentiation factor GDF-8**

promoter and its uses for tissue-specific gene expression and identification of **GDF** expression **regulators**)

L58 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:741730 HCAPLUS
DN 131:321960
TI Anti-**myostatin vaccine** for increasing **muscle** mass in animals
IN Hickey, Gerard F.
PA Merck and Co., Inc., USA
SO Brit. UK Pat. Appl., 10 pp.
CODEN: BAXXDU
DT Patent
LA English
IC ICM A61K039-395
ICS A61K039-385
ICA C07K014-495
CC 18-6 (Animal Nutrition)
Section cross-reference(s): 15, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2333706	A1	19990804	GB 1999-2041	19990129 <--
PRAI	US 1998-73438P	P	19980202 <--		

AB A method for increasing the **muscle** mass in animals, such as cow, sheep, pig, and chicken, comprises (a) administering a **vaccine** which will promote the prodn. of anti-**myostatin** (i.e., anti-**growth differentiation factor 8** or **GDF-8**) antibodies, or (b) providing the animal with an immunoneutralizing amt. of anti-**myostatin** antibodies. **Myostatin**, a member of the transforming growth factor (TGF) superfamily of proteins, is thought to exert a neg. control on the amt. of skeletal **muscle** mass in an animal. The use of a **vaccine** or antibodies to **myostatin** allows one to increase the skeletal **muscle** mass in domesticated animals and thus increase their value as food sources. The **vaccine** may be a hapten-carrier protein conjugate in which the hapten is an epitope of **myostatin**, particularly from the functional domain at the C-terminus, or it may be a fusion protein comprising such an epitope fused to a carrier protein. The fusion protein product is obtained using std. **recombinant** DNA procedures using E. coli as host. The **vaccine** is preferably administered in a formulation also contg. an adjuvant such as an aluminum salt (AlPO4) or an oil-in-water emulsion such as vitamin E acetate solubilizate. Immunoneutralization of **myostatin** may occur after a single dose or a once-yearly dose may be applied. Immunoneutralization may also be induced in pregnant animals resulting in transplacental transfer of anti-**myostatin** antibodies to the fetus and consequent increased **muscle** mass in the offspring.

ST **muscle** mass enhancer antibody **myostatin** immunoneutralization

IT Anabolic agents
Muscle
Vaccines
(anti-**myostatin vaccine** for increasing **muscle** mass in animals)

IT Proteins, specific or class
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**myostatin**, antibodies specific for; anti-**myostatin vaccine** for increasing **muscle** mass in animals)

IT Antibodies
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study);

PREP (Preparation); PROC (Process); USES (Uses)
(**myostatin**-specific; anti-**myostatin vaccine** for increasing **muscle** mass in animals)

IT Meat
(prodn. of; anti-**myostatin vaccine** for increasing **muscle** mass in animals)

L58 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:549369 HCAPLUS
DN 131:198614
TI Immunological methods to modulate **myostatin** in vertebrate subjects
IN Barker, Christopher A.; Morsey, Mohamad
PA Biostar Inc., Can.
SO PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-12
ICS C12N015-62; C12N005-10; C07K014-475; C07K016-22; A61K038-17
CC 15-2 (Immunochemistry)
Section cross-reference(s): 2, 5, 14
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9942573	A1	19990826	WO 1999-CA128	19990219 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6369201	B1	20020409	US 1999-252149	19990218 <--
	ZA 9901369	A	19990820	ZA 1999-1369	19990219 <--
	CA 2323607	AA	19990826	CA 1999-2323607	19990219 <--
	AU 9925073	A1	19990906	AU 1999-25073	19990219 <--
	EP 1056845	A1	20001206	EP 1999-904660	19990219 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 9907995	A	20010515	BR 1999-7995	19990219 <--
	JP 2002504326	T2	20020212	JP 2000-532513	19990219 <--
PRAI	US 1998-75213P	P	19980219 <--		
	WO 1999-CA128	W	19990219 <--		

AB Immunol. compns. and methods for reducing **myostatin** activity in vertebrate subjects are disclosed. The compns. include **myostatin** peptide immunogens, **myostatin** multimers and/or **myostatin** immunoconjugates capable of eliciting an immune response in a vertebrate subject to which the compns. are administered. The methods are useful for modulating endogenous **myostatin** activity in vertebrate and are also useful for treating a wide variety of disorders that cause degeneration or wasting of **muscle**.

ST **myostatin** immunoconjugate **vaccine** vertebrate **muscle** degeneration

IT Immunostimulants
(adjuvants; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Epitopes
Livestock
Molecular cloning
Protein sequences

Vaccines
Vertebrate (Vertebrata)
(compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Antibodies
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT **Muscle**, disease
(degeneration; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Growth factors, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(growth differentation factor 11; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT T cell (lymphocyte)
(helper cell, epitope; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Drug delivery systems
(immunoconjugates; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Appetite
Body weight
Lactation
Longevity
Mammary gland
(increase; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Toxins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(leukotoxins, **myostatin** conjugate; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT **Muscle**
(mass and strength increase; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Growth factors, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**myostatin**; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Adipose tissue
(redn.; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT Feed
(uptake increase; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT **Muscle**, disease
(wasting; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for

treating **muscle** wasting)

IT **161135-84-8 161135-86-0 199810-43-0**, **Myostatin** (chicken **muscle** gene MSTN) **199810-45-2**, **Myostatin** (swine **muscle** gene MSTN) **240485-48-7**, **Myostatin** (swine) **240485-51-2**, **Myostatin** (sheep) **240485-53-4**, **Myostatin** (chicken) **240485-55-6**, **Myostatin** (turkey) **240485-57-8**, **Myostatin** (zebra fish) **240485-59-0**, 45-376-**Myostatin** (mouse) **240485-61-4**, 45-376-**Myostatin** (rat) **240485-63-6**, 45-375-**Myostatin** (human clone 3) **240485-65-8**, 45-375-**Myostatin** (baboon) **240485-67-0**, 45-375-**Myostatin** (cattle clone 5) **240485-69-2**, 45-375-**Myostatin** (swine) **240485-70-5**, 45-375-**Myostatin** (sheep) **240485-72-7**, 45-375-**Myostatin** (chicken) **240485-73-8**, 45-375-**Myostatin** (turkey) **240485-75-0**, 45-374-**Myostatin** (zebra fish) **240486-08-2**, **Myostatin** (cattle clone 5) **240486-09-3**, 235-376-**Myostatin** (mouse) **240486-14-0**, 235-375-**Myostatin** (human clone 3) **240486-21-9**, 235-375-**Myostatin** (baboon) **240486-26-4**, 235-375-**Myostatin** (cattle clone 5) **240486-35-5**, 235-375-**Myostatin** (sheep) **240486-37-7**, 235-375-**Myostatin** (chicken) **240486-42-4**, 235-375-**Myostatin** (turkey) **240486-46-8**, 235-374-**Myostatin** (zebra fish) **240486-50-4**, 1-350-**Myostatin** (mouse) **240486-52-6**, 1-350-**Myostatin** (rat) **240486-53-7**, 1-350-**Myostatin** (human clone 3) **240486-54-8**, 1-350-**Myostatin** (baboon) **240486-55-9**, 1-350-**Myostatin** (cattle clone 5) **240486-56-0**, 1-350-**Myostatin** (swine) **240486-57-1**, 1-350-**Myostatin** (sheep) **240486-58-2**, 1-350-**Myostatin** (chicken) **240486-59-3**, 1-350-**Myostatin** (turkey) **240486-60-6**, 1-350-**Myostatin** (zebra fish) **240486-61-7**, 1-275-**Myostatin** (mouse) **240486-63-9**, 1-275-**Myostatin** (rat) **240486-64-0**, 1-275-**Myostatin** (human clone 3) **240486-65-1**, 1-275-**Myostatin** (baboon) **240486-66-2**, 1-275-**Myostatin** (cattle clone 5) **240486-67-3**, 1-275-**Myostatin** (swine) **240486-68-4**, 1-275-**Myostatin** (sheep) **240486-69-5**, 1-275-**Myostatin** (chicken) **240486-70-8**, 1-275-**Myostatin** (turkey) **240486-71-9**, 1-275-**Myostatin** (zebra fish) **240486-72-0**, 25-300-**Myostatin** (mouse) **240486-73-1**, 25-300-**Myostatin** (rat) **240486-74-2**, 25-300-**Myostatin** (human clone 3) **240486-76-4**, 25-300-**Myostatin** (baboon) **240486-77-5**, 25-300-**Myostatin** (cattle clone 5) **240486-78-6**, 25-300-**Myostatin** (swine) **240486-79-7**, 25-300-**Myostatin** (sheep) **240486-80-0**, 25-300-**Myostatin** (chicken) **240486-81-1**, 25-300-**Myostatin** (turkey) **240486-82-2**, 25-300-**Myostatin** (zebra fish) **240486-83-3**, 50-325-**Myostatin** (mouse) **240486-90-2**, 50-325-**Myostatin** (rat) **240486-91-3**, 50-325-**Myostatin** (human clone 3) **240486-95-7**, 50-325-**Myostatin** (baboon) **240486-96-8**, 50-325-**Myostatin** (cattle clone 5) **240486-98-0**, 50-325-**Myostatin** (swine) **240486-99-1**, 50-325-**Myostatin** (sheep) **240487-00-7**, 50-325-**Myostatin** (chicken) **240487-01-8**, 50-325-**Myostatin** (turkey) **240487-02-9**, 50-325-**Myostatin** (zebra fish) **240487-03-0**, 75-350-**Myostatin** (mouse) **240487-04-1**, 75-350-**Myostatin** (rat) **240487-05-2**, 75-350-**Myostatin** (human clone 3) **240487-06-3**,

75-350-**Myostatin** (baboon) **240487-07-4**, 75-350-**Myostatin** (cattle clone 5) **240487-08-5**, 75-350-**Myostatin** (swine) **240487-09-6**, 75-350-**Myostatin** (sheep) **240487-10-9**, 75-350-**Myostatin** (chicken) **240487-11-0**, 75-350-**Myostatin** (turkey) **240487-12-1**, 75-350-**Myostatin** (zebra fish) **240487-14-3**, 100-376-**Myostatin** (mouse) **240487-15-4**, 100-376-**Myostatin** (rat) **240487-16-5**, 100-375-**Myostatin** (human clone 3) **240487-17-6**, 100-375-**Myostatin** (baboon) **240487-18-7**, 100-375-**Myostatin** (cattle clone 5) **240487-19-8**, 100-375-**Myostatin** (swine) **240487-20-1**, 100-375-**Myostatin** (sheep) **240487-21-2**, 100-375-**Myostatin** (chicken) **240487-22-3**, 100-375-**Myostatin** (turkey) **240487-23-4**, 100-374-**Myostatin** (zebra fish)
RL: PRP (Properties)
(amino acid sequence; compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

IT 240123-41-5 240123-42-6 240123-43-7 240123-44-8 240123-45-9
240123-46-0 240123-47-1 240123-48-2 240123-49-3 240123-50-6
240123-51-7 240123-52-8 240123-53-9 240123-54-0 240123-55-1
240123-56-2 240123-57-3 240123-58-4 240123-59-5 240123-60-8
240123-61-9 240123-62-0 240123-63-1
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compn. comprising peptide or multimer or immunoconjugate of **myostatin** for modulating endogenous **myostatin** and for treating **muscle** wasting)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Kambadur; GENOME RESEARCH 1997, V7(9), P910 HCAPLUS
(2) McPherron And Lee; PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA 1997, V94(23), P12457
(3) Michel, G; WO 9902667 A 1999 HCAPLUS
(4) Univ Johns Hopkins Med; WO 9421681 A 1994 HCAPLUS
(5) Univ Johns Hopkins Med; WO 9601845 A 1996 HCAPLUS
(6) Univ Johns Hopkins Med; WO 9833887 A 1998 HCAPLUS

L58 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:506168 HCAPLUS
DN 131:282112
TI PCR based detection of bovine **myostatin** Q204X **mutation**
AU Antoniou, E.; Grosz, M.
CS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, 59301, USA
SO Animal Genetics (**1999**), 30(3), 231-232
CODEN: ANGEE3; ISSN: 0268-9146
PB Blackwell Science Ltd.
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 2, 13
AB The bovine **myostatin** gene GDF8 is responsible for the double-**muscled** phenotype obsd. in the Charolais breed. The mutant allele contains a T instead of a C at nucleotide position 610 from the start codon. A PCR based test was designed to differentiate between the normal and mutant alleles.
ST PCR detection cattle **myostatin** gene GDF8 **mutation**
IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(GDF8; PCR based detection of bovine **myostatin** Q204X **mutation**)

IT Alleles
Cattle
PCR (polymerase chain reaction)
(PCR based detection of bovine **myostatin** Q204X **mutation**)
IT Primers (nucleic acid)
RL: AGR (Agricultural use); ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(PCR based detection of bovine **myostatin** Q204X **mutation**)
IT Growth factors, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**myostatin**; PCR based detection of bovine **myostatin** Q204X **mutation**)
IT **Mutation**
(**point**, Q204X; PCR based detection of bovine **myostatin** Q204X **mutation**)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Liu; Genes Dev 1997, V11, P179 HCAPLUS
(2) McCracken; Anim Genet 1997, V28, P459 HCAPLUS

L58 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:375567 HCAPLUS
DN 131:28319
TI Maintenance of vascular smooth **muscle** integrity by morphogenic **proteins**
IN Nakaoka, Takashi; Miyazono, Kohei; Sampath, Kuber T.
PA Creative Biomolecules, Inc., USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07K014-00
CC 2-10 (Mammalian Hormones)
Section cross-reference(s): 1, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9928341	A2	19990610	WO 1998-US25398	19981130	<--
	WO 9928341	A3	19990805			
	W: AU, CA, JP, US					
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	CA 2314423	AA	19990610	CA 1998-2314423	19981130	<--
	AU 9917064	A1	19990616	AU 1999-17064	19981130	<--
	EP 1037910	A2	20000927	EP 1998-961838	19981130	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
PRAI	US 1997-67690P	P	19971204	<--		
	WO 1998-US25398	W	19981130	<--		

AB Disclosed are compns. and methods for maintaining the integrity of smooth **muscle**, particularly vascular smooth **muscle**. Vascular diseases are characterized by an excessive build-up of vascular smooth **muscle** cells, resulting in an occlusion of a blood vessel, and/or by loss of elasticity in the blood vessels. Causes of blood vessel occlusion include smooth **muscle** cell proliferation and inflammatory responses. Inhibition of the proliferation of smooth **muscle** cells or inflammatory responses represents an effective treatment for vascular disorders, such as atherosclerosis and restenosis. Treatment may include administration of a morphogenic **protein**. The **protein** itself may be delivered to the site of vascular

occlusion or the **protein** may be delivered by a vector, such as an adenoviral vector contg. a DNA **insert** encoding a morphogenic **protein**. Such compns. and methods may also inhibit the responses of smooth **muscle** cells to various traumas, such as exposure to toxic agents. All of these treatments operate to preserve the cell phenotype by inhibiting an increase in extracellular matrix **proteins**, such as collagen, or by maintaining the normal balance of extracellular matrix **proteins**, such as Types I and III collagen.

ST morphogenic **protein** vascular smooth **muscle** proliferation

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(2; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(3; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(4; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(5; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(6; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(6A; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Bone morphogenetic **proteins**
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(7; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-10 (bone morphogenetic **protein** 10); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-11 (bone morphogenetic **protein** 11); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-12 (bone morphogenetic **protein** 12); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-15 (bone morphogenetic **protein** 15); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-16 (bone morphogenetic **protein** 16); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-9 (bone morphogenetic **protein** 9); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Enhancer (genetic element)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(CMV-IE; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(DPP; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-1 (growth/differentiation factor 1); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-10 (growth/differentiation factor 10); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-11 (growth/differentiation factor 11); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(GDF-3 (growth/differentiation factor 3); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-5 (growth/differentiation factor 5); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-6 (growth/differentiation factor 6); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-7 (growth/differentiation factor 7); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**GDF-8 (growth/differentiation factor 8**); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(GDF-9 (growth/differentiation factor 9); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Cytomegalovirus
(IE enhancer of; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(OP-2 (osteogenic **protein** 2); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(OP-3 (osteogenic **protein** 3); maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Vgl; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT **Proteins**, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Vgr; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Medical equipment
(angioplasty devices, morphogen adsorption on; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Artery
(angioplasty, restenosis after; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT Antiarteriosclerotics
(antiatherosclerotics; maintenance of vascular smooth **muscle**

integrity with morphogenic **proteins**)
IT Blood vessel
(endothelium, inflammation; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Cell proliferation
Cytotoxic agents
Gene therapy
Genetic vectors
Molecular cloning
Protein sequences
Transformation, genetic
Virus vectors
cDNA sequences
(maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Promoter (genetic element)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Hormones, animal, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(morphogens; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Adsorption
(of morphogens on angioplasty equipment; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Proliferation inhibition
(proliferation inhibitors; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Artery, disease
(restenosis; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Blood vessel
(smooth **muscle**; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT **Mutation**
(**substitution**; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Collagens, biological studies
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(type I, **regulation** of; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Collagens, biological studies
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(type III, **regulation** of; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Adenoviridae
(vectors; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT Actins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(.beta.-, chicken gene encoding, promoter of; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)
IT 167616-23-1P, Bone morphogenetic **protein** 7 (human)
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological

study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(amino acid sequence; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

IT 138674-79-0P, DNA (human bone morphogenetic **protein** 7 cDNA plus flanks)
RL: BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(nucleotide sequence; maintenance of vascular smooth **muscle** integrity with morphogenic **proteins**)

L58 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:364318 HCAPLUS
DN 131:142902
TI **Myostatin**, a transforming growth factor-.beta. superfamily member, is expressed in heart **muscle** and is **upregulated** in cardiomyocytes after infarct
AU Sharma, Mridula; Kambadur, Ravi; Matthews, Kenneth G.; Somers, Wayne G.; Devlin, Gerard P.; Conaglen, John V.; Fowke, Peter J.; Bass, John J.
CS Growth Physiology, AgResearch, Hamilton, N. Z.
SO Journal of Cellular Physiology (**1999**), 180(1), 1-9
CODEN: JCLLAX; ISSN: 0021-9541
PB Wiley-Liss, Inc.
DT Journal
LA English
CC 14-5 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2, 3, 13
AB **Myostatin** is a secreted growth and differentiating factor (**GDF-8**) that belongs to the transforming growth factor-beta (TGF-.beta.) superfamily. Targeted disruption of the **myostatin** gene in mice and a **mutation** in the third exon of the **myostatin** gene in double-**muscled** Belgian Blue cattle breed result in skeletal **muscle** hyperplasia. Hence, **myostatin** has been shown to be involved in the **regulation** of skeletal **muscle** mass in both mice and cattle. Previous published reports utilizing Northern hybridization had shown that **myostatin** expression was seen exclusively in skeletal **muscle**. A significantly lower level of **myostatin** mRNA was also reported in adipose tissue. Using a sensitive reverse transcription-polymerase chain reaction (RT-PCR) technique and Western blotting with anti-**myostatin** antibodies, the authors show that **myostatin** mRNA and **protein** are not restricted to skeletal **muscle**. The authors also show that **myostatin** expression is detected in the **muscle** of both fetal and adult hearts. Sequence anal. reveals that the Belgian Blue heart **myostatin** cDNA sequence contains an 11 nucleotide **deletion** in the third exon that causes a frameshift that eliminates virtually all of the mature, active region of the **protein**. Anti-**myostatin** immunostaining on heart sections also demonstrates that **myostatin protein** is localized in Purkinje fibers and cardiomyocytes in heart tissue. Furthermore, following myocardial infarction, **myostatin** expression is **upregulated** in the cardiomyocytes surrounding the infarct area. Given that **myostatin** is expressed in fetal and adult hearts and that **myostatin** expression is **upregulated** in cardiomyocytes after the infarction, **myostatin** could play an important role in cardiac development and physiol.
ST **myostatin** expression heart infarction **mutation** Belgian Blue cattle
IT Cattle
(Belgian Blue; **myostatin protein** and mRNA expression in fetal and adult heart and skeletal **muscle**, **upregulation** in cardiomyocytes after infarct, and

deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Heart
(Purkinje fiber; **myostatin protein** and mRNA
expression in fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Transcriptional **regulation**
(activation; **myostatin protein** and mRNA expression
in fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT **Mutation**
(**deletion**; **myostatin protein** and mRNA
expression in fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Gene
(expression; **myostatin protein** and mRNA expression
in fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Embryo, animal
(fetus; **myostatin protein** and mRNA expression in
fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT **Protein** sequences
(for **myostatin** of Belgian Blue cattle heart)

IT Heart, disease
(infarction; **myostatin protein** and mRNA expression
in fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Heart
(myocyte; **myostatin protein** and mRNA expression in
fetal and adult heart and skeletal **muscle**,
upregulation in cardiomyocytes after infarct, and
deletion mutation in heart **myostatin** in
Belgian Blue cattle)

IT Heart
Muscle
(**myostatin protein** and mRNA expression in fetal and
adult heart and skeletal **muscle**, **upregulation** in
cardiomyocytes after infarct, and **deletion mutation**
in heart **myostatin** in Belgian Blue cattle)

IT mRNA
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(**myostatin protein** and mRNA expression in fetal and
adult heart and skeletal **muscle**, **upregulation** in
cardiomyocytes after infarct, and **deletion mutation**
in heart **myostatin** in Belgian Blue cattle)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)

(**myostatin protein** and mRNA expression in fetal and adult heart and skeletal **muscle**, **upregulation** in cardiomyocytes after infarct, and **deletion mutation** in heart **myostatin** in Belgian Blue cattle)

IT Growth factors, animal
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(**myostatin**; **myostatin protein** and mRNA expression in fetal and adult heart and skeletal **muscle**, **upregulation** in cardiomyocytes after infarct, and **deletion mutation** in heart **myostatin** in Belgian Blue cattle)

IT cDNA sequences
(of **myostatin** of Belgian Blue cattle heart)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L58 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:330462 HCAPLUS
DN 130:350322
TI Methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding
IN Lee, Se-Jin; McPherron, Alexandra C.
PA The Johns Hopkins University School of Medicine, USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-68
ICS C12P019-34; C07K016-00; C07H021-04
CC 13-6 (Mammalian Biochemistry)
Section cross-reference(s): 3, 17
FAN.CNT 7

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9924618	A1	19990520	WO 1998-US23850	19981110 <--

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,

MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9913909 A1 19990531 AU 1999-13909 19981110 <--
PRAI US 1997-967089 A 19971110 <--
WO 1998-US23850 W 19981110 <--

AB Methods for detecting allelic variants of the **myostatin** (growth and differentiation factor-8) gene are provided. Specifically provided are methods of identifying subjects having or having a predisposition for increased **muscle** mass as compared to subjects having wild-type **myostatin**. Increased **muscle** mass is particularly desirable in meat animals, including cattle, swine, sheep, poultry and fish. Two high **muscle** mass breeds of cattle, Piedmontese and Belgian Blue, had new alleles of the **myostatin** gene with **mutations** in exon 3. Cloning of the **myostatin** genes of humans and a no. of livestock animals is described. Primers and probes for the detection of wild-type and Belgian Blue and Piedmontese alleles of the cattle **myostatin** gene are described.

ST **muscle** mass livestock **myostatin** gene alleles;
Piedmontese cattle **muscle** mass **myostatin** variant;
Belgian Blue cattle **muscle** mass **myostatin** variant

IT Beef cattle
(Belgian Blue, **myostatin** gene of; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Beef cattle
(Piedmontese, **myostatin** gene of; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT **Mutation**
(**deletion**, in **myostatin** gene in high **muscle** mass cattle; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Nucleic acid hybridization
PCR (polymerase chain reaction)
RFLP (restriction fragment length polymorphism)
(for detection of alleles of **myostatin** gene; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Primers (nucleic acid)
Probes (nucleic acid)
RL: AGR (Agricultural use); ARG (Analytical reagent use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(for detection of alleles of **myostatin** gene; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Breeding, animal
(for lean **muscle** mass; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Test kits
(for screening for alleles of **myostatin** genes; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Genetic polymorphism
(in **myostatin** genes; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT **Muscle**
(methods for detection of alleles of **myostatin** genes that

affect lean **muscle** mass and their use in animal breeding)

IT Baboon
Chicken (Gallus domesticus)
Danio rerio
Mouse
Rat
Sheep
Swine
Turkey
(**myostatin** gene of; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Gene, animal
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(**myostatin**, alleles of in breeding livestock **muscle** mass; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Growth factors, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); PROC (Process); USES (Uses)
(**myostatins**; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT Alleles
(of **myostatin** genes; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT **Mutation**
(**transition**, in **myostatin** gene in high **muscle** mass cattle; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT 224952-91-4 224952-92-5
RL: AGR (Agricultural use); ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer for detection of **myostatin** gene alleles; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT 224952-93-6 224952-94-7 224952-97-0 224953-00-8 224953-02-0 224953-04-2 224953-07-5 225105-45-3
RL: AGR (Agricultural use); ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(probe for detection of **myostatin** gene alleles; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

IT 224952-95-8 224952-96-9
RL: AGR (Agricultural use); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(target for detection of alleles of cattle **myostatin** gene; methods for detection of alleles of **myostatin** genes that affect lean **muscle** mass and their use in animal breeding)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L58 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:64915 HCAPLUS
DN 130:134990
TI **Mutations** in the **myostatin** gene cause double-**muscling** in mammals
IN Grobet, Luc; Georges, Michel; Poncelet, Dominique
PA University of Liege, Belg.
SO PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-00
ICS C12N015-12; C07K014-495; C12N005-10; C12Q001-68; A01K067-027; A61K048-00
CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 6, 13, 14, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9902667	A1	19990121	WO 1998-IB1197	19980714	<--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	US 6103466	A	20000815	US 1997-891789	19970714	<--
	AU 9884571	A1	19990208	AU 1998-84571	19980714	<--
	EP 1002068	A1	20000524	EP 1998-935228	19980714	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
	JP 2001509378	T2	20010724	JP 2000-502165	19980714	<--
PRAI	US 1997-891789	A2	19970714	<--		
	US 1998-7761	A2	19980115	<--		
	WO 1998-IB1197	W	19980714	<--		

AB Genes (cDNA) encoding bovine and human **myostatin** **proteins** are provided contg. open reading frames encoding **proteins** of 375 amino acids in length. A mutant gene in which the coding sequence lacks an 11-bp consecutive sequence of the sequence encoding bovine **protein** having **myostatin** activity was sequenced. Cattle of the Belgian Blue breed homozygous for the mutant gene lacking **myostatin** activity are double-**muscled**. A method for detg. the presence of muscular hyperplasia in a mammal is described. The method includes obtaining a sample of material contg. DNA from the mammal and ascertaining whether a sequence of the DNA encoding (a) a **protein** having biol. activity of **myostatin**, is present, and whether a sequence of the DNA encoding (b) an allelic **protein** lacking the activity of (a), is present. The absence of (a) and the presence of (b) indicates the presence of muscular hyperplasia in the mammal.
ST **myostatin** gene sequence **mutation** muscular hyperplasia; bovine **myostatin** gene **mutation** muscular hyperplasia; human **myostatin** gene **mutation** muscular hyperplasia
IT PCR (polymerase chain reaction)
(RT-PCR (reverse transcription-PCR), primers for diagnostic kit; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT cDNA sequences
(for **myostatin** from bovine and human)

IT Diagnosis
(genetic; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT Ribozymes
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(increasing **muscle** mass by treatment with; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT **Muscle,** disease
(muscular hyperplasia; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT Cattle
Genetic mapping
Molecular cloning
Mutation
Test kits
(**mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT Gene, animal
RL: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT Primers (nucleic acid)
Probes (nucleic acid)
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT **Proteins,** specific or class
RL: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**myostatins; mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT **Protein** sequences
(of **myostatin** from bovine and human)
IT DNA sequences
(of **myostatin** gene from bovine)
IT Genetic mapping
(phys.; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT 219991-75-0 219991-76-1
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(PCR primer; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT **161135-86-0 219991-53-4, Myostatin** (cattle)
219991-78-3
RL: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; **mutations** in the **myostatin** gene cause double-**muscling** in mammals)
IT **219991-52-3,** DNA (cattle **myostatin** cDNA plus flanks)
219991-54-5, DNA (human **myostatin** cDNA plus flanks)
219991-68-1, DNA (cattle **myostatin** gene plus flanks)
219991-77-2
RL: ADV (Adverse effect, including toxicity); ANT (Analyte); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleotide sequence; **mutations** in the **myostatin**

gene cause double-**muscling** in mammals)
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Charlier; Mammalian Genome 1995, V6(11), P788 HCAPLUS
(2) Dickman; Science 1997, V277(5334), P1922 HCAPLUS
(3) Georges; Genome Research 1996, V6, P907 HCAPLUS
(4) Grobet; Mamm Genome 1998, V9(3), P210 HCAPLUS
(5) Grobet; Nature Genetics 1997, V17(1), P71 HCAPLUS
(6) Kambadur; Genome Research 1997, V7(9), P910 HCAPLUS
(7) Kappes; Genome Research 1997, V7, P235 HCAPLUS
(8) McPherron; Nature 1997, V387, P83 HCAPLUS
(9) McPherron; Proc Natl Acad Sci USA 1997, V94(23), P12457 HCAPLUS
(10) Smith; Mammalian Genome 1997, V8(10), P742 HCAPLUS
(11) Univ Johns Hopkins Med; WO 9421681 A 1994 HCAPLUS
(12) Univ Johns Hopkins Med; WO 9833887 A 1998 HCAPLUS
(13) Westhusin, M; Nature Genetics 1997, V17(1), P4 HCAPLUS
(14) Westhusin, M; Nature Genetics 1997, V17(1), P71

L58 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:744046 HCAPLUS
DN 130:149113
TI **Myostatin mutations** cause double **muscling** in cattle
AU Smith, Timothy P.; Casas, Eduardo; Fahrenkrug, Scott C.; Stone, Roger T.; Kappes, Steven M.; Keele, John W.
CS USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, 68933-0166, USA
SO Proceedings - Annual Reciprocal Meat Conference, American Meat Science Association (**1998**), 51st, 112-117
CODEN: PRMCAC; ISSN: 0198-8999
PB National Live Stock and Meat Board
DT Journal; General Review
LA English
CC 3-0 (Biochemical Genetics)
Section cross-reference(s): 13
AB A review with 14 refs. on the identification of the double **muscling** gene as the gene for **myostatin** in cattle. The double **muscling** cattle breeds Belgian Blue and Asturiana contain a translational frameshift **mutation** in the 3rd exon of the **myostatin** gene MSTN. Double **muscled** Piedmont cattle contain a G.fwdarw.A transition **mutation** that changes a cysteine to a tyrosine. Further anal. of other double **muscled** breeds has identified 5 independent **mutations**, all of which are predicted to disrupt the function of the **protein**.
ST review **myostatin mutation** double **muscling** cattle
IT Gene, animal
RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(MSTN; **myostatin mutations** cause double **muscling** in cattle)
IT Phenotypes
(double **muscling**; **myostatin mutations** cause double **muscling** in cattle)
IT Cattle
Muscle
Mutation
(**myostatin mutations** cause double **muscling** in cattle)
IT Growth factors, animal
RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU

(Occurrence); USES (Uses)
(**myostatin**; **mutations** cause double **muscling** in cattle)
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Arthur, P; Aust J Agric Res 1995, V46, P1493
(2) Beever, J; Proc Plant and Animal Genome VI 1998, P32
(3) Casas, E; J Anim Sci 1998, V76, P468 HCAPLUS
(4) Charlier, C; Mamm Genome 1995, V6, P788 HCAPLUS
(5) Chowdhary, B; Mamm Genome 1996, V7, P297 HCAPLUS
(6) Dunner, S; Mamm Genome 1997, V8, P430 HCAPLUS
(7) Fujii, J; Science 1991, V253, P448 HCAPLUS
(8) Grobet, L; Mamm Genome 1998, V9, P210 HCAPLUS
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(10) Kambadur, R; Genome Res 1997, V7, P910 HCAPLUS
(11) McPherron, A; Proc Natl Acad Sci USA 1997, V94, P12457 HCAPLUS
(12) Smith, T; Mamm Genome 1997, V8, P742 HCAPLUS
(13) Solinas-Toldo, S; Genomics 1995, V27, P489 HCAPLUS
(14) Sonstegard, T; Mamm Genome 1997, V8, P751 HCAPLUS

L58 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:177070 HCAPLUS
DN 128:279422
TI Molecular definition of an allelic series of **mutations** disrupting the **myostatin** function and causing double-**muscling** in cattle
AU Grobet, Luc; Poncelet, Dominique; Royo, Luis Jose; Brouwers, Benoit; Pirottin, Dimitri; Michaux, Charles; Menissier, Francois; Zanotti, Marta; Dunner, Susana; Georges, Michel
CS Dep. Genetics, Fac. Veterinary Med., Univ. Liege, Liege, 4000, Belg.
SO Mammalian Genome (**1998**), 9(3), 210-213
CODEN: MAMGEC; ISSN: 0938-8990
PB Springer-Verlag New York Inc.
DT Journal
LA English
CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 6, 13
AB We have detd. the entire **myostatin** coding sequence for 32 double-**muscled** cattle sampled from ten European cattle breeds. Seven DNA sequence polymorphisms were identified, of which five would be predicted to disrupt the function of the **protein**, one is a conservative amino acid **substitution**, and one a silent DNA sequence variant. Four **addnl**. DNA sequence polymorphisms were identified in **myostatin** intronic sequences. In all but two breeds, all double-**muscled** animals were either homozygous or compd. heterozygotes for one of the five loss-of-function **mutations**. The absence of obvious loss-of-function **mutations** in the coding sequence of the two remaining breeds points either towards **addnl. mutations** in unexplored segments of the gene, or towards locus heterogeneity of double-**muscling**.
ST **myostatin** gene **mutation** double **muscling** cattle
IT Phenotypes
(double-**muscling**; mol. definition of allelic series of **mutations** disrupting **myostatin** function and causing double-**muscling** in cattle)
IT **Mutation**
(loss-of-function; mol. definition of allelic series of **mutations** disrupting **myostatin** function and causing double-**muscling** in cattle)
IT Cattle
DNA sequences

Genetic polymorphism
Protein sequences
(mol. definition of allelic series of **mutations** disrupting **myostatin** function and causing double-**muscling** in cattle)

IT Growth factors, animal
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**myostatin**; mol. definition of allelic series of **mutations** disrupting **myostatin** function and causing double-**muscling** in cattle)

L58 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1997:768637 HCAPLUS
DN 128:57742
TI Double **muscling** in cattle due to **mutations** in the **myostatin** gene
AU Mcpherron, Alexandra C.; Lee, Se-Jin
CS Department of Molecular Biology and Genetics, Johns Hopkins University School of Medicine, Baltimore, MD, 21205, USA
SO Proceedings of the National Academy of Sciences of the United States of America (**1997**), 94(23), 12457-12461
CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
CC 2-10 (Mammalian Hormones)
Section cross-reference(s): 3, 12, 14
AB **Myostatin** (**GDF-8**) is a member of the transforming growth factor .beta. superfamily of secreted growth and differentiation factors that is essential for proper **regulation** of skeletal **muscle** mass in mice. Here the authors report the **myostatin** sequences of nine other vertebrate species and the identification of **mutations** in the coding sequence of bovine **myostatin** in two breeds of double-**muscled** cattle, Belgian Blue and Piedmontese, which are known to have an increase in **muscle** mass relative to conventional cattle. The Belgian Blue **myostatin** sequence contains an 11-nucleotide **deletion** in the third exon which causes a frameshift that eliminates virtually all of the mature, active region of the mol. The Piedmontese **myostatin** sequence contains a missense **mutation** in exon 3, resulting in a **substitution** of tyrosine for an invariant cysteine in the mature region of the **protein**. The similarity in pheno-types of double-**muscled** cattle and **myostatin** null mice suggests that **myostatin** performs the same biol. function in these two species and is a potentially useful target for genetic manipulation in other farm animals.
ST vertebrate DNA **protein** sequence **myostatin**; **muscling** cattle **myostatin** gene **mutation**
IT Cattle
(Belgian Blue and Piedmontese; double **muscling** in cattle due to **mutations** in **myostatin** gene)
IT Gene, animal
RL: PRP (Properties)
(MSTN; double **muscling** in cattle due to **mutations** in **myostatin** gene)
IT **Mutation**
(**deletion**; double **muscling** in cattle due to **mutations** in **myostatin** gene)
IT Cell differentiation
Chicken (Gallus domesticus)
Danio rerio
Papio hamadryas

Protein sequences
Rat (Rattus norvegicus)
Sheep
Swine
Turkey
Vertebrate (Vertebrata)
cDNA sequences
(double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Muscle**
(doubling; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Mutation**
(**frameshift**; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Protein** sequences
(homol.; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT Evolution
(mol.; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT Growth factors, animal
RL: PRP (Properties)
(**myostatins**; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Mutation**
(**nonsense**; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Mutation**
(**substitution**; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **Mutation**
(**transition**; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT Transforming growth factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(.beta.-; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **161135-86-0**, **Growth/differentiation factor 8** (human) **199810-41-8** **199810-42-9**, **Myostatin** (cattle **muscle** gene MSTN) **199810-43-0**, **Myostatin** (chicken **muscle** gene MSTN) **199810-44-1**, **Myostatin** (sheep **muscle** gene MSTN) **199810-45-2**, **Myostatin** (swine **muscle** gene MSTN) **199810-46-3** **199810-47-4**, **Myostatin** (turkey **muscle** gene MSTN) **199810-48-5**, **Myostatin** (Danio rerio **muscle** gene MSTN)
RL: PRP (Properties)
(amino acid sequence; double **muscling** in cattle due to **mutations** in **myostatin** gene)

IT **200048-13-1**, GenBank AF019619 **200048-14-2**, GenBank AF019620 **200048-15-3**, GenBank AF019621 **200048-16-4**, GenBank AF019622 **200048-17-5**, GenBank AF019623 **200048-18-6**, GenBank AF019624 **200048-19-7**, GenBank AF019625 **200048-20-0**, GenBank AF019626 **200048-21-1**, GenBank AF019627
RL: PRP (Properties)
(nucleotide sequence; double **muscling** in cattle due to **mutations** in **myostatin** gene)

L58 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2003 ACS
AN 1997:600692 HCAPLUS

DN 127:315882
TI **Mutations** in **myostatin** (GDF8) in double-**muscled** Belgian Blue and Piedmontese cattle
AU Kambadur, Ravi; Sharma, Mridula; Smith, Timothy P. L.; Bass, John J.
CS AgResearch, Hamilton, N. Z.
SO Genome Research (**1997**), 7(9), 910-916
CODEN: GEREFS; ISSN: 1088-9051
PB Cold Spring Harbor Laboratory Press
DT Journal
LA English
CC 6-3 (General Biochemistry)
Section cross-reference(s): 3, 13, 14
AB A visibly distinct muscular hypertrophy (mh), commonly known as double **muscling**, occurs with high frequency in the Belgian Blue and Piedmontese cattle breeds. The autosomal recessive mh locus causing double-**muscling** condition in these cattle maps to bovine chromosome 2 within the same interval as **myostatin**, a member of the TGF-.beta. superfamily of genes. Because targeted disruption of **myostatin** in mice results in a muscular phenotype very similar to that seen in double-**muscled** cattle, we have evaluated this gene as a candidate gene for double-**muscling** condition by cloning the bovine **myostatin** cDNA and examg. the expression pattern and sequence of the gene in normal and double-**muscled** cattle. The anal. demonstrates that the levels and timing of expression do not appear to differ between Belgian Blue and normal animals, as both classes show expression initiating during fetal development and being maintained in adult **muscle**. Moreover, sequence anal. reveals **mutations** in heavy-**muscled** cattle of both breeds. Belgian Blue cattle are homozygous for an 11-bp **deletion** in the coding region that is not detected in cDNA of any normal animals examd. This **deletion** results in a frame-shift **mutation** that removes the portion of the **Myostatin protein** that is most highly conserved among TGF-.beta. family members and that is the portion targeted for disruption in the mouse study. Piedmontese animals tested have a G-A transition in the same region that changes a cysteine residue to a tyrosine. This **mutation** alters one of the residues that are hallmarks of the TGF-.beta. family and are highly conserved during evolution and among members of the gene family. It therefore appears likely that the mh allele in these breeds involves **mutation** within the **myostatin** gene and that **myostatin** is a neg. **regulator** of **muscle** growth in cattle as well as mice.
ST cattle cDNA sequence **myostatin** GDF8; **protein** sequence cattle **myostatin** GDF8; developmental expression **myostatin** gene GDF8 cattle
IT **Protein** sequences
cDNA sequences
(cloning and sequencing of bovine **myostatin**)
IT **Mutation**
(**deletion**; 11-bp **deletion** in the **myostatin** (GDF8) gene in Belgian Blue cattle results in a frame-shift **mutation** in the **myostatin protein**)
IT Embryo, animal
Muscle
(developmental expression of the bovine **myostatin** (GDF8) gene in normal and double-**muscled** Belgian Blue cattle and expression in different adult **muscles**)
IT Gene
(expression; developmental expression of the bovine **myostatin** (GDF8) gene in normal and double-**muscled** Belgian Blue cattle and expression in different adult **muscles**)
IT Embryo, animal
(fetus; developmental expression of the bovine **myostatin**

(GDF8) gene in normal and double-**muscled** Belgian Blue cattle and expression in different adult **muscles**)

IT Gene, animal
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(for **myostatin** (GDF8); cloning and sequencing of bovine **myostatin**)

IT **Muscle**, disease
(hypertrophy; **mutations** in **myostatin** (GDF8) gene in double-**muscled** Belgian Blue and Piedmontese cattle)

IT Cattle
(**mutations** in **myostatin** (GDF8) gene in double-**muscled** Belgian Blue and Piedmontese cattle)

IT **Proteins**, specific or class
RL: ADV (Adverse effect, including toxicity); PRP (Properties); BIOL (Biological study)
(**myostatin**; cloning and sequencing of bovine **myostatin**)

IT **Mutation**
(**transition**; **transition mutation** (G.fwdarw.A) found in the **myostatin** (GDF8) gene in Piedmontese cattle)

IT **197731-05-8**, **Myostatin** (cattle reduced)
RL: ADV (Adverse effect, including toxicity); PRP (Properties); BIOL (Biological study)
(amino acid sequence; cloning and sequencing of bovine **myostatin**)

IT **197431-01-9**, DNA (cattle **myostatin** cDNA)
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; cloning and sequencing of bovine **myostatin**)